



The City of OKLAHOMA CITY

<b>Staff Only:</b>	Date Stamp
Zoning: <u>HP or HL</u>	
District: _____	
HPCA- _____ - _____	
Received by: _____	

APPLICATION FOR CERTIFICATE OF APPROPRIATENESS

NOTE: any relevant permits must be applied for and paid for separately in the Development Services Dept.  
NOTE: Contact Historic Preservation Staff for final design inspection when work is complete.

Please select:  New Project  Revision  Extension  Violation Notice Issued

Location of Proposed Work (Address): 4020 N Western Ave

Legal Description of Property (lot, block, addition): 017-022 / 005 Crown Heights ADD

Year built: \_\_\_\_\_ Exterior wall material: metal Floor area: 2'x2' sq.ft.

Itemized Work Items (List EACH ITEM proposed. Work not listed here will NOT be reviewed):

New Construction  Addition  Fence  Demolition (specify structure) \_\_\_\_\_

Paving (specify) \_\_\_\_\_  Renovation (specify) \_\_\_\_\_

Work not specified above \_\_\_\_\_

Installation of a 30'+/- foot tall black metal small cell pole in the streetscape

Owner's Authorization

I hereby certify that all above statements and statements contained in all attached and transmitted exhibits are true to the best of my knowledge and belief. In the event this proposal is approved and begun, I agree to complete the changes in accordance with approved plans in a good and workmanlike manner. I authorize the City of Oklahoma City to enter the property for the purpose of observing and photographing the project for presentations and to ensure consistency between the approved proposal and the completed project.

(If applicable): I authorize my representative to speak for me in matters regarding this application. Any agreement made by my representative regarding this proposal will be binding upon me.

Owner's Signature	<u><i>Cierra Merino</i></u>	Date	<u>6/29/20</u>
Name (printed)	<u>Cierra Merino</u>	Organization	<u>Verizon Wireless</u>
Address	<u>12223 State Farm Blvd</u>	Phone	<u>800-264-6620</u>
City, State, Zip	<u>Tulsa, OK 74117</u>	Email	<u>Cierra.merino@vzw.com</u>

I prefer to be:  Mailed or  Emailed.

Representative Signature	<u>Victor McAlister</u>	Date	<u>11/18/20</u>
Name (printed)	<u>Victor McAlister</u>	Organization	<u>Verticom</u>
Address	<u>2817 S Ann Arbor Blvd</u>	Phone	<u>405-823-0733</u>
City, State, Zip	<u>Oklahoma City, OK 73128</u>	Email	<u>victor.mcalister@verticom.n</u>

I prefer to be:  Mailed or  Emailed.

Contact:  Owner  Representative

Is Federal money, a federal license or a federal permit included/required for any part of this project? Yes / No

If yes, what Federal agency? N/A

Is the property owner pursuing the Federal Tax Credits for Rehabilitation of income producing historic properties? Yes / No (For questions concerning the federal tax credit program, telephone the State Historic Preservation Office at (405) 522-4479).

NOTE: Specific deadlines apply to submission of additional documentation or requests for appeals. Should your project be continued or denied, you are responsible for compliance with those deadlines.



CONSTRUCTION PLANS FOR SMALL CELL SITE

REVO-2020-\_\_\_\_, SUBMITTAL\_\_\_\_, REVISION\_\_\_\_

SITE NAME: OK OKC UNIVERSITY NORTH 044

STRUCTURE TYPE: PROPOSED METAL POLE
COORDINATES: 35.511990°, -97.529734°
ADDRESS: 4020 N WESTERN AVE. UNIT SC OKLAHOMA CITY, OK 73118

PLANS PREPARED FOR: verizon
600 HIDDEN RIDGE
IRVING, TX 75038
972-444-5365

PLANS PREPARED BY: VERTICOM
IDEAS. SOLUTIONS. RESULTS.
7901 AMBASSADOR ROW
DALLAS, TX 75247
PHONE: (214) 741-6898

PLANS PREPARED BY: ARIA SERVICES, INC.
WWW.ARIA-CORP.COM
10006 LYNBROOK DR.
HOUSTON, TX 77042
(281) 797-4387
COA # 6827

SPECIAL NOTES: CALL OKLAHOMA ONE CALL (800) 522-OKIE CALL 3 WORKING DAYS BEFORE YOU DIG! 811

DRAWN BY: AS REVIEWED BY: JAS
DESIGNED BY: JAS

POLE ZONING SPECIFICS 1

Table with 7 columns: IN DESIGN DISTRICT? (Y/N), POLE TYPE, POLE COLOR, POLE HEIGHT AGL, ANTENNA RAD CENTER, OMNI ANTENNA RAD CENTER, GROUND ELEVATION. Values: NO, PROPOSED METAL POLE, BLACK, 30', 26', 29', 1190.90'

SITE INFORMATION 2

LOCATION CODE: 638584
JURISDICTION: CITY OF OKLAHOMA CITY
POLE OWNER: VERIZON
TELCO UTILITY: ONE FIBER (VzB)
POWER UTILITY: OG&E

REVIEWING AGENCY 3



The City of OKLAHOMA CITY
Public Works Department

DRAWING INDEX 4

Table with 3 columns: SHEET NO., SHEET TITLE, REV. NO. Lists sheets 1-15 including Title Sheet, General Notes, Maps, Aerial Site Plan, etc.

REVISIONS table with columns: REV, DATE, DESCRIPTION, BY. Shows revisions 0, 1, 2.

ENGINEERING SEAL: MANSOUR SHIRVANI, LICENSED PROFESSIONAL ENGINEER, OKLAHOMA, 26670, 11/16/20

COA 6827
Aria Services, Inc.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE INFO: OK OKC UNIVERSITY NORTH 044
4020 N WESTERN AVE. UNIT SC, OKLAHOMA CITY, OK 73118
35.511990°, -97.529734°
OKLAHOMA COUNTY

SHEET DESCRIPTION: TITLE SHEET

SHEET NUMBER: 1 OF 15

GENERAL NOTES 6

THE FACILITY IS NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR AFFECT EXISTING DRAINAGE...

SUBMITTALS, REVIEWS AND APPROVALS 7

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

SUBMITTAL DATES TO OKC

Checklist for submittals with fields for Field Checked by, Checked by, and City Engineer, each with a date field.

Checklist for submittal dates with fields for Check Print #1, Check Print #2, and Final Plans, each with a date field.

CONSTRUCTION MUST BEGIN WITHIN ONE (1) YEAR FROM THE DATE OF APPROVAL, OR THAT APPROVAL IS WITHDRAWN.

APPROVED:

SCOPE OF WORK 8

VERIZON:

- 1. INSTALL NEW STEALTH POLE WITH NEW FOUNDATION.
2. INSTALL (3) PROPOSED ANTENNA/RADIOS INSIDE SHROUD.
3. INSTALLATION OF (1) OMNI ANTENNA, (1) RRH AND (1) RECTIFIER.
4. INSTALL PROPOSED DISCONNECT/LOAD CENTER.
5. INSTALL PROPOSED NEMA 3R RATED FIBER BOX.
6. INSTALL FIBER CONDUIT AND FIBER FROM MEET ME POINT TO FIBER BOX INSIDE POLE.
7. INSTALL PROPOSED GROUNDING CONDUCTOR (INSIDE POLE) FROM EQUIPMENT TO GROUND ROD.
8. ALL WIRES (INCLUDING POWER AND FIBER) ARE TO BE INSTALLED INSIDE POLE.

OG&E:

- 1. RUN POWER UNDERGROUND FROM POWER SOURCE TO NEW POLE AND TERMINATE.

GOVERNING CODES 9

ALL CONSTRUCTION WORK SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES...

- 2017 NATIONAL ELECTRICAL CODE
• 2015 INTERNATIONAL BUILDING CODE
• 2015 INTERNATIONAL MECHANICAL CODE
• 2015 INTERNATIONAL PLUMBING CODE
• 2015 LIFE SAFETY CODE (NFPA 101)
• OG&E CONSTRUCTION STANDARDS
• 2015 INTERNATIONAL FIRE CODE
• CITY ORDINANCES
• CITY SMALL CELL DESIGN MANUAL
• COUNTY ORDINANCES
• LOCAL BUILDING CODE(S)
• ANSI EIA/TIA 222-G

**GENERAL NOTES**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL CONTROL BENCHMARKS WHICH ARE DISTURBED OR DAMAGED BY CONSTRUCTION. A LAND SURVEYOR MUST FIELD LOCATE, REFERENCE, AND/OR PRESERVE ALL HISTORICAL OR CONTROLLING MONUMENTS PRIOR TO ANY EARTHWORK. IF DAMAGED, SUCH MONUMENTS SHALL BE REPLACED WITH APPROPRIATE MONUMENTS BY A LAND SURVEYOR. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED AS REQUIRED BY THE PROFESSIONAL LAND SURVEYORS ACT.
2. IMPORTANT NOTICE: CONTRACTOR SHALL CALL LOCAL UNDERGROUND LOCATE SERVICE THREE WORKING DAYS BEFORE ANY CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES WITHIN PROPOSED EXCAVATIONS AND MUST MAINTAIN MINIMUM VERTICAL AND HORIZONTAL CLEARANCES AS CALLED FOR BY LOCAL CODES AND/OR ORDINANCES.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING STRUCTURES OR LANDSCAPING DAMAGED DURING CONSTRUCTION.
5. CLEARING OF TREES AND VEGETATION ON THE SITE SHOULD BE HELD TO A MINIMUM. ONLY THE TREES NECESSARY FOR CONSTRUCTION OF THE FACILITIES SHALL BE REMOVED. ANY DAMAGE TO PROPERTY OUTSIDE THE LEASE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL USE ADEQUATE NUMBER OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHOD NEEDED FOR PROPER PERFORMANCE OF THE WORK.
7. CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNAL LOOPS, CONDUIT, AND LANE STRIPING DAMAGED DURING CONSTRUCTION.
8. THIS PROJECT WILL BE INSPECTED BY ENGINEERING AND FIELD ENGINEERING DIVISION.
9. THE COMPLETE BID PACKAGE INCLUDES THESE CONSTRUCTION DRAWINGS ALONG WITH THE FINAL RF DESIGN AND TOWER STRUCTURAL ANALYSIS. CONTRACTOR IS RESPONSIBLE FOR REVIEW OF TOTAL BID PACKAGE PRIOR TO BID SUBMITTAL.
10. ANY MANHOLES OR COVERS INSTALLED AS PART OF THIS PROJECT SHALL BE LABELED COMMUNICATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF AN EROSION CONTROL PLAN WHICH MEETS ALL APPLICABLE REQUIREMENTS OF STATE AND LOCAL AGENCIES HAVING JURISDICTION.
12. THE CONTRACTOR SHALL MAINTAIN MATERIALS AND EQUIPMENT ON SITE FOR UNFORESEEN SITUATIONS INCLUDING DAMAGE TO UNDERGROUND WATER, SEWER, AND STORM DRAIN FACILITIES WHICH COULD GENERATE FLOWS ABLE TO CAUSE EROSION AND SEDIMENT POLLUTION.
13. CONSTRUCTION MANAGER WILL CONFIRM FAA APPROVAL OF TOWER LOCATION BY ISSUING TOWER RELEASE FORM. NO TOWER SHALL BE CONSTRUCTED UNTIL THE TOWER RELEASE FORM IS ISSUED TO THE CONTRACTOR.
14. SITE GROUNDING SHALL COMPLY WITH VERIZON GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.
15. PERMITS: OBTAIN AND PAY FOR REQUIRED PERMITS, LICENSES, FEES, INSPECTIONS, ETC.
16. RECORD DRAWINGS: MAINTAIN A RECORD OF ALL CHANGES, SUBSTITUTIONS BETWEEN WORK AS SPECIFIED AND INSTALLED. RECORD CHANGES ON A CLEAN SET OF CONTRACT DRAWINGS WHICH SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER UPON COMPLETION OF THE PROJECT.
17. THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING ON THE WORK CONTAINED IN THIS DESIGN PACKAGE.

**SPECIAL NOTES**

1. INDEMNIFICATION CLAUSE: THE CONTRACTOR AGREES AND SHALL: ASSUME SOLE AND COMPLETE RESPONSIBILITY OF THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTIES. THESE REQUIREMENTS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONDITIONS. THE CONTRACTOR FURTHER AGREES TO DEFEND INDEMNITY AND HOLD OWNER, REPRESENTATIVES, AND ENGINEERS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT.
2. PRIOR TO START OF CONSTRUCTION AND THROUGH PROJECT COMPLETION, THE CONTRACTOR SHALL REMAIN IN FULL COMPLIANCE WITH CURRENT FEDERAL, STATE, AND LOCAL OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
3. ALL WORK SHALL CONFORM TO THE LATEST STANDARD "SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AS ADOPTED BY THE CITY, COUNTY OR STATE AND AS MODIFIED BY STANDARD PLAN AND ADDENDUMS.
4. ALL UTILITIES AND OTHER FACILITIES DEPICTED ON THE PLANS ARE BASED ON A SEARCH OF AVAILABLE RECORDS AND FIELD OBSERVATIONS. THE CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION START AND USE EXTREME CARE AND PROTECTIVE MEASURES TO AVOID DAMAGE TO ANY FACILITIES WHETHER OR NOT INDICATED ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL FACILITIES WITHIN THE LIMITS OF WORK, WHETHER OR NOT DEPICTED ON THESE PLANS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF ANY CITY, COUNTY OR STATE ENGINEER INSPECTION DEPARTMENT A MINIMUM TWO DAYS PRIOR TO COMMENCEMENT OF ACTIVITY REQUIRING THEIR INVOLVEMENT.
6. THE EXPIRATION OF THE PERMIT FOR THIS PROJECT SHALL BE SPECIFIED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
7. ALL UNDERGROUND CONDUITS PLACED AS PART OF THIS PROJECT MUST HAVE A MINIMUM COVER OF 48 INCHES UNLESS OTHERWISE APPROVED.
8. THE CONTRACTOR SHALL TUNNEL ALL CURB AND GUTTERS AND BORE ALL CONCRETE DRIVEWAYS AND WALKWAYS AT THE DIRECTION OF THE CITY, COUNTY OR STATE ENGINEER HAVING JURISDICTION.
9. ALL PAVEMENT CUT OR DAMAGED AS PART OF THIS PROJECT SHALL BE REPLACED AT THE DIRECTION OF THE CITY, COUNTY OR STATE ENGINEER HAVING JURISDICTION.
10. ALL SHRUBS, PLANTS OR TREES DAMAGED OR DISTURBED DURING THE COURSE OF THE WORK SHALL BE REPLANTED AND/OR REPLACED SO AS TO RESTORE THE WORK SITE TO ITS ORIGINAL CONDITION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROCESSING OF ALL APPLICANT PERMIT FORMS ALONG WITH REQUIRED LIABILITY INSURANCE FORMS CLEARLY DEMONSTRATING OWNER, OWNER REPRESENTATIVES, ENGINEER, AND CITY, COUNTY OR STATE ARE ALSO INSURED WITH THE REQUIRED LIABILITY INSURANCE FOR THIS CONSTRUCTION PROJECT.
12. ALL SUBSURFACE STRUCTURES INCLUDING BUT NOT LIMITED TO VAULTS, PEDESTALS, AND CONDUITS SHALL BE AS SPECIFIED IN THESE PLANS OR AS SPECIFIED BY THE ENGINEER. ANY DEVIATIONS SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO INSTALLATION.
13. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO SEWER LATERALS AND WATER SERVICES, BOTH VERTICAL AND HORIZONTAL, PRIOR TO COMMENCING IMPROVEMENT OPERATIONS.
14. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETION OF EXPLORATION EXCAVATIONS CONDUCTED FOR THE PURPOSE OF LOCATING EXISTING FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS AS REQUIRED.
15. LOCATIONS OF EXISTING UTILITIES ON THESE PLANS ARE BASED UPON EXISTING RECORDS VERIFIED WHERE POSSIBLE WITH FIELD TIES. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF LOCATIONS SHOWN, BOTH HORIZONTAL AND VERTICALLY. PRIOR TO CONSTRUCTION, SUBSTANTIAL VARIANCES FROM THE PLANS SHALL BE COMMUNICATED TO THE ENGINEER TO FACILITATE CHANGES TO CONSTRUCTION DRAWINGS AS REQUIRED.

**EXCAVATION & GRADING NOTES**

1. ALL CUT AND FILL SLOPES SHALL BE 3 : 1 MAXIMUM.
2. ALL EXCAVATIONS ON WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE FROM LOOSE MATERIAL AND EXCESS GROUND WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED IF REQUIRED.
3. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC MATERIAL. IF SOUND SOIL IS NOT REACHED AT THE DESIGNATED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION BE FILLED WITH CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION.
4. ANY EXCAVATION OVER THE REQUIRED DEPTH SHALL BE FILLED WITH EITHER MECHANICALLY COMPACTED GRANULAR MATERIAL OF CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. STONE, IF USED, SHALL NOT BE USED AS COMPILING CONCRETE THICKNESS.
5. AFTER COMPLETION OF THE FOUNDATION AND OTHER CONSTRUCTION BELOW GRADE, AND BEFORE BACK FILLING, ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH.
6. BACK FILL SHALL BE:
  - APPROVED MATERIALS CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND, GRAVEL, OR SOFT SHALE;
  - FREE FROM CLODS OR STONES OVER 2-1/2" MAXIMUM DIMENSIONS;
  - IN LAYERS AND COMPACTED.
7. SITE FILL MATERIAL AND FOUNDATION BACK FILL SHALL BE PLACED IN LAYERS, MAXIMUM 6" DEEP BEFORE COMPACTION. EACH LAYER SHALL BE SPRINKLED IF REQUIRED AND COMPACTED BY HAND OPERATED OR MACHINE TAMPERS TO 95% OF MAXIMUM DENSITY, AT THE OPTIMUM MOISTURE CONTENT %1282% AS DETERMINED BY ASTM DESIGNATION D-698, UNLESS OTHERWISE APPROVED. SUCH BACK FILL SHALL NOT BE PLACED BEFORE 3 DAYS AFTER PLACEMENT OF CONCRETE.
8. THE FOUNDATION AREA SHALL BE GRADED TO PROVIDE WATER RUNOFF AND PREVENT WATER FROM STANDING. THE FINAL GRADE SHALL SLOPE AWAY IN ALL DIRECTIONS FROM THE FOUNDATION AND SHALL THEN BE COVERED WITH 4" DEEP COMPACTED STONE OR GRAVEL.
9. CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY LOCAL CITY, COUNTY AND STATE CODES AND ORDINANCES TO PROTECT EMBANKMENTS FROM SOIL LOSS AND TO PREVENT ACCUMULATION OF SOIL AND SILT IN STREAMS AND DRAINAGE PATHS LEAVING THE CONSTRUCTION THIS MAY INCLUDE SUCH MEASURES AS SILT FENCES, STRAW BALE SEDIMENT BARRIERS AND CHECK DAMS.
10. FILL PREPARATION: REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACING FILLS. PLOW STRIP OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING SURFACE. WHEN SUBGRADE OR EXISTING GROUND SURFACE TO RECEIVE FILL HAS A DENSITY LESS THAN THAT REQUIRED FOR FILL, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION OR AERATE SOIL AND RECOMPACT TO REQUIRED DENSITY.
11. REPLACE THE EXISTING WEARING SURFACE ON AREAS WHICH HAVE BEEN DAMAGED OR REMOVED DURING CONSTRUCTION OPERATIONS. SURFACE SHALL BE REPLACE TO MATCH EXISTING ADJACENT SURFACING AND SHALL BE OF THE SAME THICKNESS. NEW SURFACE SHALL BE FREE FROM CORRUGATIONS AND WAVES. EXISTING SURFACING MAY BE EXCAVATED SEPARATELY AND REUSED IF INJURIOUS AMOUNTS OF EARTH, ORGANIC MATERIAL, OF OTHER DELETERIOUS MATERIALS ARE REMOVED PRIOR TO REUSE. FURNISH ALL ADDITIONAL RESURFACING MATERIAL AS REQUIRED. BEFORE SURFACING IS REPLACED, SUBGRADE SHALL BE GRADED TO CONFORM TO REQUIRED SUBGRADE ELEVATIONS, AND LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED. DEPRESSIONS IN THE SUBGRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. SURFACING SHALL NOT BE USED FOR FILLING DEPRESSIONS IN THE SUBGRADE.
12. PROTECT EXISTING SURFACING AND SUBGRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE. USE PLANKING OR OTHER SUITABLE MATERIALS DESIGNED TO SPREAD EQUIPMENT LOADS. REPAIR DAMAGE TO EXISTING GRAVEL SURFACING OR SUBGRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTOR'S OPERATIONS. DAMAGED GRAVEL SURFACING SHALL BE RESTORED TO MATCH THE ADJACENT UNDAMAGED GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS.
13. DAMAGE TO EXISTING STRUCTURES AND UTILITIES RESULTING FROM CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED / REPLACED TO OWNER'S SATISFACTION AT CONTRACTOR'S EXPENSE.
14. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH PROPERTY OWNER SO AS TO AVOID INTERRUPTIONS TO PROPERTY OWNER'S OPERATIONS.
15. ENSURE POSITIVE DRAINAGE DURING AND AFTER COMPLETION OF CONSTRUCTION.
16. RIPRAP SHALL BE CLEAN, HARD, SOUND, DURABLE, UNIFORM IN QUALITY, AND FREE OF ANY DETRIMENTAL QUANTITY OF SOFT, FRIABLE, THIN, ELONGATED OR LAMINATED PIECES, DISINTEGRATED MATERIAL, ORGANIC MATTER, OIL, ALKALI, OR OTHER DELETERIOUS SUBSTANCE.
17. IF A METERING CABINET IS INSTALLED, A MINIMUM 3" CLEARANCE IS REQUIRED AT DOOR OPENING.
18. IF A METERING CABINET IS INSTALLED, THE CONTRACTOR SHALL CAULK THE CABINET BASE AT THE PAD.

**STANDARD TRENCHING NOTES**

1. TRENCH ALIGNMENT SHALL BE AS STRAIGHT AS CONDITION PERMIT, ANY DEVIATIONS FROM PLANNED ALIGNMENT SHALL HAVE PRIOR APPROVAL BY THE PROJECT ENGINEER/INSPECTOR. ALL TRENCH CUTS SHALL BE IN ACCORDANCE WITH EXISTING SAFETY REGULATIONS IN EFFECT.
2. THE CONTRACTOR SHALL COORDINATE WITH THE COMPANY INSPECTOR MINIMUM 48 HOURS FOR INSPECTION OF WORK PRIOR TO BACKFILLING.
3. IN OPEN TRENCH, A WIDTH OF 12" MINIMUM WITH MORE THAN ONE ELECTRICAL SUPPLY CONDUIT. 4" MINIMUM WITH ONE ELECTRICAL SUPPLY CONDUIT (IN SOLID ROCK PIPE DIAMETER DETERMINES MINIMUM WIDTH).
4. TRENCH BOTTOM SHOULD BE UNDISTURBED, TAMPED, OR RELATIVELY SMOOTH EARTH. WHERE EXCAVATION IS IN ROCK, THE CONDUIT SHOULD BE LAID ON A LAYER OF CLEAN BACKFILL.
5. ALL BACKFILL SHOULD BE FREE OF DEBRIS OR OTHER MATERIAL THAT MAY DAMAGE THE CONDUIT SYSTEM OR CAUSE SETTLLING. THE MATERIAL SHOULD FILL THE VOIDS AROUND THE CONDUIT TO PREVENT HOT SPOTS AND SETTLLING.
6. A MINIMUM OF 2'-0" OF COVER SHALL BE MAINTAINED OVER ALL ELECTRICAL CONDUITS.
7. A MINIMUM OF 2'-0" OF COVER SHALL BE MAINTAINED OVER ALL COMMUNICATIONS CONDUITS.
8. IN STREETS, SLURRY TO GRADE AND MILL DOWN 1-1/2" FOR AC CAP.
9. IN DIRT, SLURRY TO 18" FROM GRADE AND FILL WITH 95% COMPACTION NATIVE SOIL FOR BALANCE.
10. WARNING TAPE SHALL BE INSTALLED 1'-0" ABOVE ALL CONDUITS. #18 WARNING TAPE SHALL BE INSTALLED ABOVE GROUND RING.

**ROW UTILITY POLE CONSTRUCTION NOTES**

1. BOLT THREADS SHALL NOT PROTRUDE MORE THAN 1-1/2"
2. HOLES LEFT IN POLE DUE TO REARRANGEMENT OF CLIMBERS SHALL BE FILLED.
3. CLIMB STEPS ADJACENT TO CONDUIT SHALL HAVE EXTENDED STEPS.
4. CABLE SHALL NOT IMPEDE 15" CLEAR SPACE OFF POLE FACE (12:00).
5. 90° SHORT SWEEPS SHALL BE USED UNDER ANTENNA ARM. CABLES MUST TRANSITION ON THE INSIDE OR BOTTOM OF ARMS. (NO CABLE SHALL BE INSTALLED ON TOP OF ARMS.)
6. CABLE CLAMPS SHALL BE UTILIZED TO SECURE CABLE TO ARMS; 2" CARRIER CABLE ID TAGS SHALL BE PLACED ON BOTH SIDES OF ARMS.
7. UTILIZE A 90° CONNECTOR AT CABLE CONNECTION TO ANTENNA.
8. 1/2" CABLE TO BE UTILIZED UNLESS NOTED OTHERWISE.
9. VOIDS AROUND CABLES AT CONDUIT OPENINGS SHALL BE FILLED WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

**EROSION AND SEDIMENT CONTROL NOTES**

TEMPORARY EROSION/SEDIMENT CONTROL PRIOR TO COMPLETION OF FINAL IMPROVEMENTS SHALL BE INSTALLED BY CONTRACTOR OR QUALIFIED PERSON AS INDICATED BELOW:

1. ALL REQUIREMENTS OF THE CITY, COUNTY AND STATE "STORM WATER STANDARDS" MUST BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING/IMPROVEMENTS CONSISTENT WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WATER QUALITY TECHNICAL REPORT (WQTR), AND/OR WATER POLLUTION CONTROL PLAN (WPCP).
2. A GRAVEL BAG SILT BASIN SHALL BE INSTALLED IMMEDIATELY UPSTREAM OF STORM DRAIN INLETS AS INDICATED ON DETAILS.
3. FOR INLETS LOCATED AT SUMPS ADJACENT TO TOP OF SLOPES, THE CONTRACTOR SHALL INSURE WATER DRAINING TO THE SUMP IS DIRECTED INTO THE INLET AND A MINIMUM OF 1.00' FREEBOARD EXISTS AND IS MAINTAINED ABOVE THE TOP OF THE INLET. IF FREEBOARD IS NOT PROVIDED BY GRADING SHOWN ON THESE PLANS THE CONTRACTOR SHALL PROVIDE IT VIA TEMPORARY MEASURES, I.E. GRAVEL BAGS OR DIKES.
4. THE CONTRACTOR OR QUALIFIED PERSON SHALL BE RESPONSIBLE FOR CLEANUP OF SILT AND MUD ON ADJACENT STREET(S) AND STORM DRAIN SYSTEM DUE TO CONSTRUCTION ACTIVITY.
5. THE CONTRACTOR OR QUALIFIED PERSON SHALL CHECK AND MAINTAIN ALL LINED AND UNLINED DITCHES AFTER EACH RAINFALL.
6. THE CONTRACTOR SHALL REMOVE SILT AND DEBRIS AFTER EACH MAJOR RAINFALL.
7. THE CONTRACTOR SHALL MAINTAIN EQUIPMENT AND WORKERS FOR EMERGENCY WORK AT ALL TIMES DURING THE RAINY SEASON. MATERIALS NECESSARY FOR EMERGENCY MEASURES SHALL BE STOCKPILED ON SITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
8. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL EROSION/SEDIMENT CONTROL DEVICES TO WORKING ORDER TO THE SATISFACTION OF THE CITY/COUNTY/STATE ENGINEER OR RESIDENT ENGINEER FOLLOWING ANY RUN-OFF PRODUCING RAINFALL.
9. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION/SEDIMENT CONTROL MEASURES AS REQUIRED BY THE RESIDENT ENGINEER DUE TO UNCOMPLETED GRADING OPERATIONS OR UNFORESEEN CIRCUMSTANCES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE AND TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.
11. ALL EROSION/SEDIMENT CONTROL MEASURES PROVIDED PER THE APPROVED GRADING PLAN SHALL BE INCORPORATED HERON. ALL EROSION/SEDIMENT CONTROL FOR INTERIM CONDITIONS SHALL BE DONE TO THE SATISFACTION OF THE RESIDENT ENGINEER.
12. UPON COMPLETION OF WORK EACH DAY, GRADED AREAS AROUND THE PROJECT PERIMETER MUST DRAIN AWAY FROM THE FACE OF THE SLOPE.
13. ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN RAIN IS IMMINENT.
14. GRADING, INCLUDING CLEARING AND GRUBBING SHALL ONLY BE CONDUCTED IN AREAS WHERE THE CONTRACTOR OR QUALIFIED PERSON CAN PROVIDE EROSION/SEDIMENT CONTROL MEASURES.

**INSTALLATION NOTES**

1. COMMUNICATION EQUIPMENT SHALL BE ARRANGED AND MOUNTED TO PROVIDE OTHER UTILITIES CLEAR CLIMBING SPACE TO THEIR EQUIPMENT ON THE POLE, PER NESC 236D.
2. ALL INSTALLATIONS SHALL COMPLY WITH THE CURRENT PUBLISHED ISSUES OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC), AND POLE ATTACHMENT STANDARDS FOR POLE OWNER.
3. CONDUCTORS OR CABLES SHALL BE CONTINUOUS AND WITHOUT SPLICES.
4. CONDUCTORS OR CABLES SHALL BE COVERED WITH MOLDING FOR THE FULL DISTANCE THEY ARE IN CONTACT WITH THE POLE.
5. CONDUCTORS OR CABLES SHALL HAVE A SEPARATION OF AT LEAST 2-INCHES, IN ANY DIRECTION, FROM ALL METAL PARTS AND EQUIPMENT EXCEPT WHERE THEY ENTER SUCH EQUIPMENT.
6. WHERE BOTH OG&E AND COMMUNICATIONS SYSTEMS ARE GROUND ON JOINT USE STRUCTURE, A SINGLE GROUNDING CONDUCTOR SHALL BE USED OR THE GROUNDING CONDUCTORS SHALL BE BONDED TOGETHER. EXCEPTION: WHERE OG&E IS MAINTAINING ISOLATION BETWEEN PRIMARY AND SECONDARY NEUTRALS, THEN CONNECT COMMUNICATION NEUTRAL ONLY TO PRIMARY GROUNDING CONDUCTOR.
7. NEW POLE SHALL BE PLACED FAR ENOUGH FROM BACK OF CURB AS TO NOT OBSTRUCT STANDARD TRAFFIC CONTROL SIGNS INSTALLED IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES(MUTCD)
8. BORING WILL BE REQUIRED UNDER ALL STREETS, DRIVEWAYS, SIDEWALKS, FLUMES, AND OTHER SURFACE INFRASTRUCTURES IN CITY RIGHT OF WAYS AND PUBLIC UTILITY EASEMENTS.
9. 3 FOOT MINIMUM HORIZONTAL SEPARATION IS REQUIRED FROM THE OUTSIDE EDGE OF ALL STORM SEWER PIPES.
10. ANTENNAS, RADIOS, AND OTHER EQUIPMENT TO BE ATTACHED TO POLE USING BANDS AND OR BRACKETS PROVIDED BY VERIZON.
11. CONDUIT TO BE STUBBED OUT OF THE GROUND FOR UNDERGROUND POWER AND FIBER, AS NEEDED.

PLANS PREPARED FOR:



600 HIDDEN RIDGE  
IRVING, TX 75038  
872-444-5385

PLANS PREPARED BY:



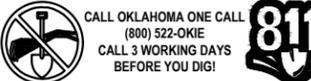
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DALLAS, TX 75247  
PHONE: (214) 741-6898

PLANS PREPARED BY:



WWW.ARIA-CORP.COM  
10006 LYNBROOK DR.  
HOUSTON, TX 77042  
(281) 797-4387  
COA # 6827

SPECIAL NOTES:



CALL OKLAHOMA ONE CALL  
(800) 522-OKIE  
CALL 3 WORKING DAYS  
BEFORE YOU DIG!

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DESIGNED BY: JAS

REVISIONS:

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1	11/11/2020	VERIZON COMMENTS	AS
2	11/16/2020	SUBMITTAL TO CITY	TH

ENGINEERING SEAL:



11/16/20

COA 6827  
Aria Services, Inc.

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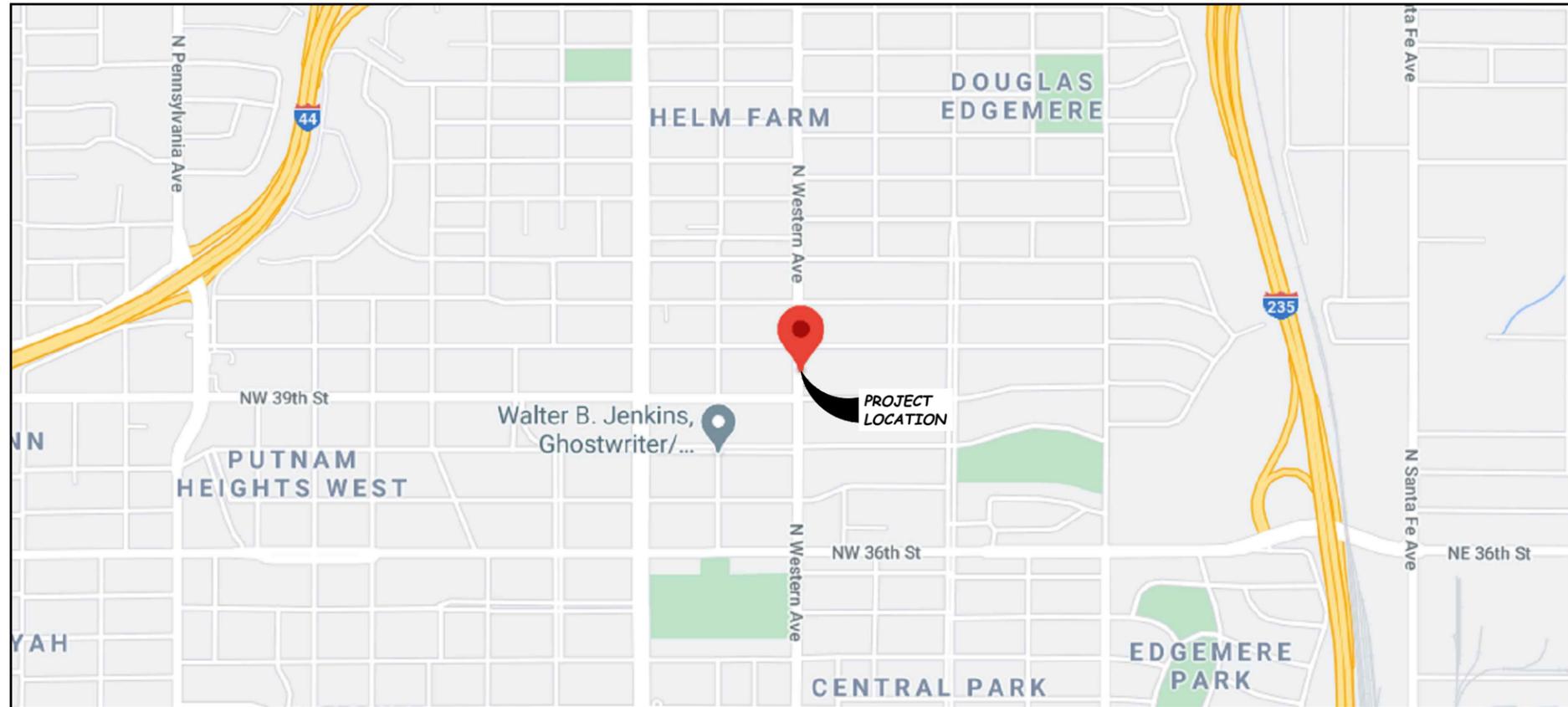
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4020 N WESTERN AVE. UNIT SC,  
OKLAHOMA CITY, OK 73118  
35.511990°, -97.529734°  
OKLAHOMA COUNTY

SHEET DESCRIPTION:

**GENERAL NOTES**

SHEET NUMBER:

**2 OF 15**



**VICINITY MAP**

SCALE: N.T.S.



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IRVING, TX 75038  
972-444-5385

PLANS PREPARED BY:

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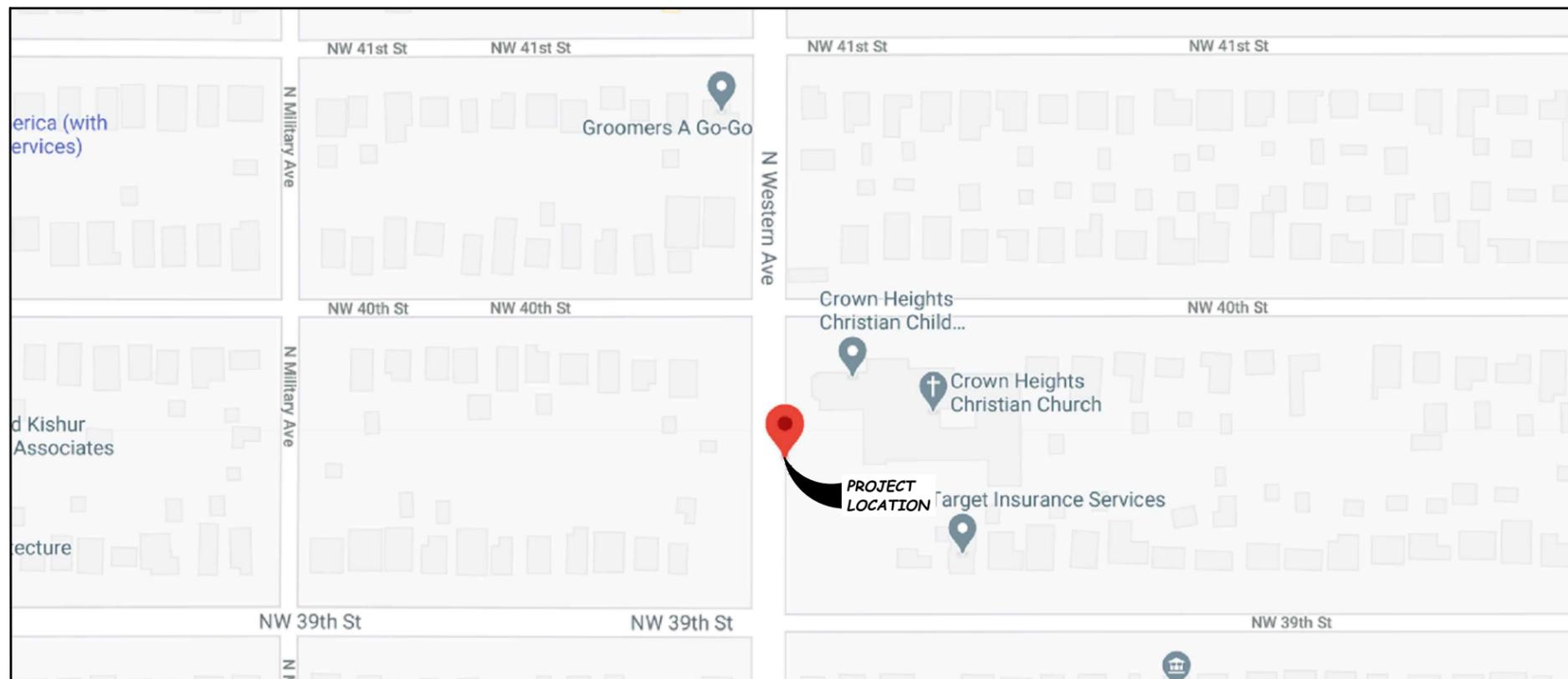
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**LOCATION MAP**

SCALE: N.T.S.



ENGINEERING SEAL:

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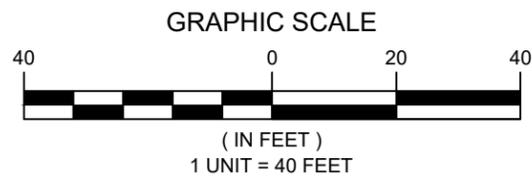
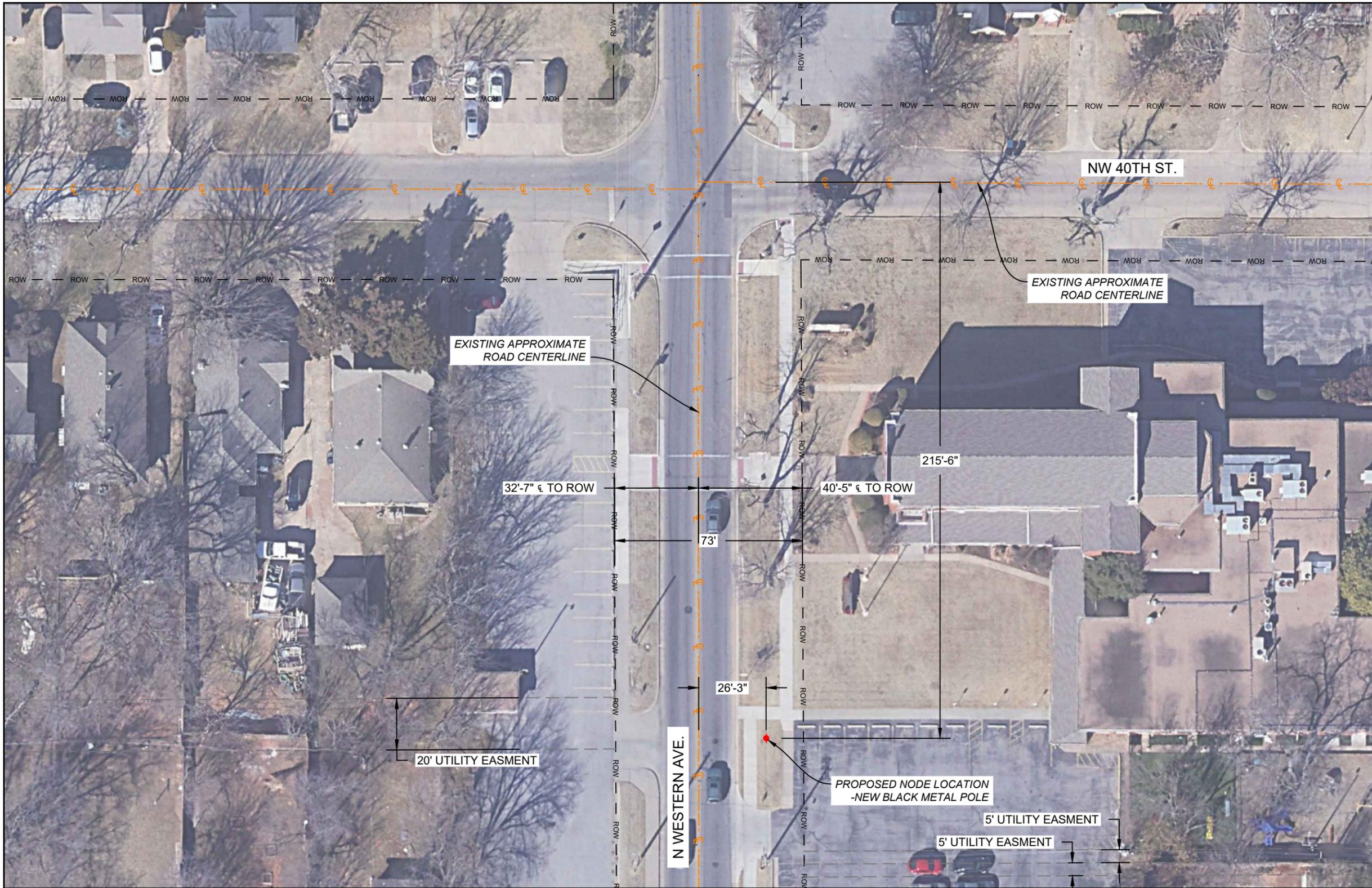
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SHEET DESCRIPTION:  
**MAPS**

SHEET NUMBER:  
**3 OF 15**



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**verizon**

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COA # 6827

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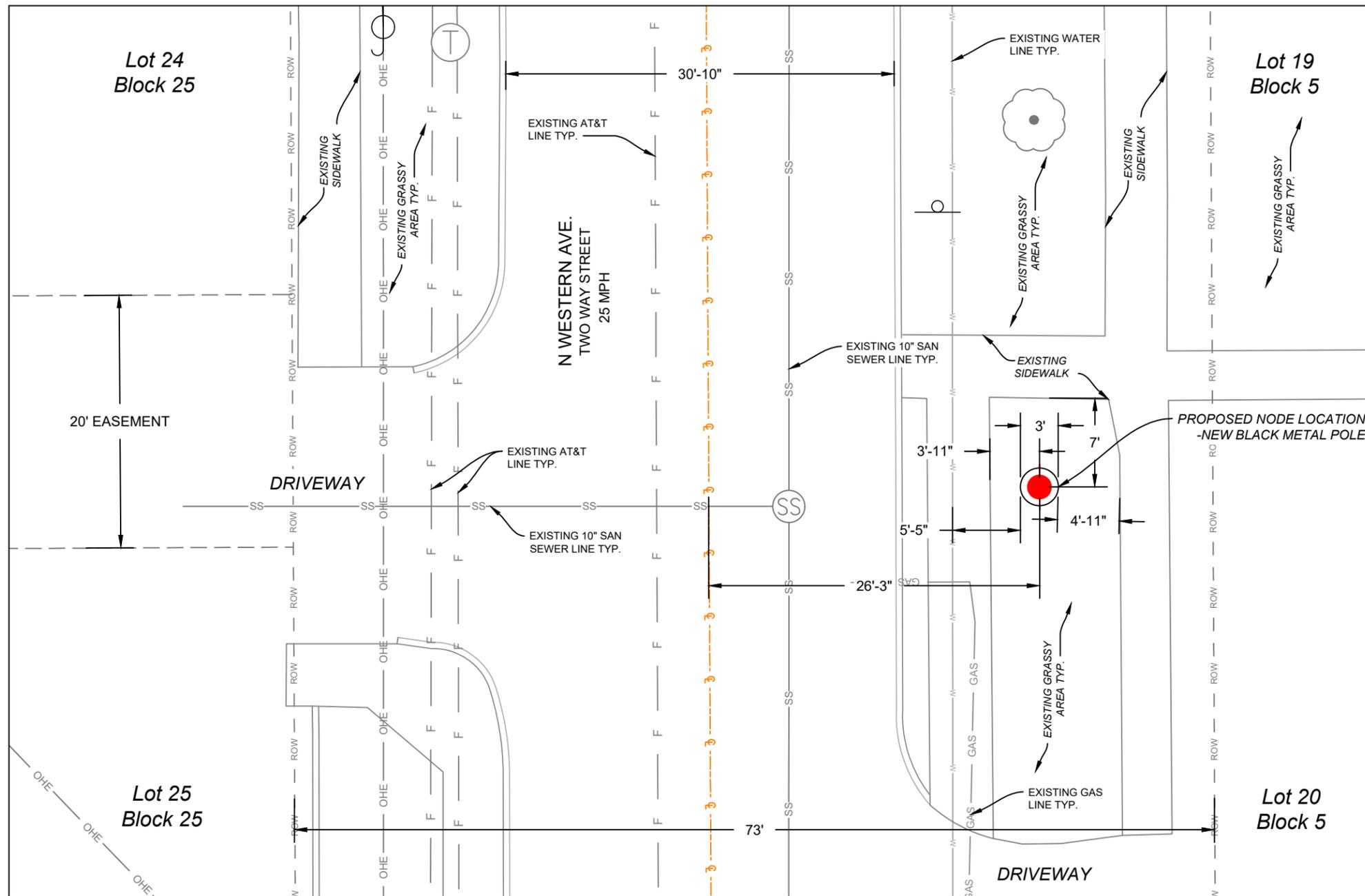
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SHEET DESCRIPTION:

**AERIAL SITE PLAN**

SHEET NUMBER:

**4 OF 15**

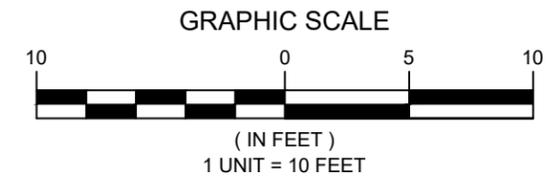


**CONSTRUCTION NOTES**

- ONLY THE UTILITIES (UNDERGROUND AND OVERHEAD NOTED AS PROPOSED IN THESE DRAWINGS ARE TO BE PERMITTED. ALL OTHERS ARE TO BE PERMITTED UNDER A SEPARATE SET OF CONSTRUCTION DOCUMENTS COMPLETED BY OTHERS.
- NO PAVING CUTS OR REPAIR AREAS ARE CURRENTLY PROPOSED AS A PART OF THESE PLANS. REFER TO PROPOSED UTILITY DRAWINGS COMPLETED BY OTHERS FOR ADDITIONAL INFORMATION.
- BORING WILL BE REQUIRED UNDER ALL STREETS, DRIVEWAYS, SIDEWALKS, FLUMES AND OTHER SURFACE INFRASTRUCTURES IN CITY RIGHT OF WAYS AND PUBLIC UTILITY EASEMENTS.
- MINIMUM HORIZONTAL SEPARATION IS REQUIREMENT FROM THE OUTSIDE EDGE OF ALL PUBLIC UTILITY MAINS, FITTINGS AND STRUCTURES TO THE OUTSIDE EDGE OF THE PRIVATE IMPROVEMENT.
- IN LOCATIONS WHERE SIDEWALKS ARE NOT CURRENTLY LOCATED, PRIVATE IMPROVEMENTS MUST BE 6 FOOT BACK OF CURB/PAVING.
- WORK THAT IS WITHIN PUBLIC RIGHT OF WAY: CONTACT THE CITY OF OKLAHOMA CITY TRAFFIC MANAGEMENT DEPARTMENT TO OBTAIN A "WORK ZONE PERMIT" AT 4052972531 A WORK ZONE PERMIT MUST BE OBTAINED FROM THE TRAFFIC MANAGEMENT DIVISION AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF WORK AND/OR PLACEMENT OR REMOVING ANY BARRICADES OR MODIFYING EXISTING TRAFFIC CONTROL DEVICES. EMAIL: WORKZONES@OKC.GOV TO OBTAIN AN APPLICATION.
- POLES SHALL BE PLACED MINIMUM FIVE (5) FEET BACK OF CURB AS TO NOT OBSTRUCT STANDARD TRAFFIC CONTROL SIGNS INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

**LEGEND**

- ROW --- EX. RIGHT OF WAY
- EX. EASEMENT
- CENTERLINE
- X --- EX. FENCE
- ▨ EX. BUILDING
- BOC --- EX. BACK OF CURB
- ➡ FLOW OF TRAFFIC
- ⊕ UTILITY MH
- ⊞ TELECOM PEDESTAL
- ⊞ UTILITY HANDHOLE
- ⊞ UTILITY VALVEMETER
- ⊞ FIRE HYDRANT
- ⊞ STREET SIGN
- ⊞ UTILITY POLE
- ⊞ LIGHT POLE
- PROPOSED NODE POLE
- ⊞ TRAFFIC LIGHT POLE
- BOLLARD
- ⊞ EX. TREES



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 COA # 6827

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 DESIGNED BY: JAS

REVISIONS:

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 OKLAHOMA COUNTY

SHEET DESCRIPTION:  
**DETAILED SITE PLAN**

SHEET NUMBER:  
**5 OF 15**

PROPOSED INSTALLATION	OKLAHOMA CITY FACILITIES				
	WATER		WASTE WATER	STORM WATER*	
	<16"	≥16"	<15"	≥15"	ALL DIAMETER
HORIZONTAL SEPARATION REQUIREMENTS (IN FEET) FROM THE OUTSIDE EDGE OF PIPE, MANHOLES, FIRE HYDRANTS, AND FITTINGS					
TELECOMMUNICATION CABLES/CONDUITS/DUCT BANKS	5	8	5	8	3
FIBER OPTIC CABLES/CONDUITS/DUCT BANKS	5	8	5	8	3
UNDERGROUND ELECTRIC CONDUITS/DUCT BANKS	5	8	5	8	3
MANHOLES/STRUCTURES/HAND HOLE (HH) BOXES	5	8	5	8	3
VERTICAL SEPARATION REQUIREMENTS (IN FEET BELOW OKC FACILITIES) FROM THE OUTSIDE EDGE OF PIPE, MANHOLES, FIREHYDRANTS, & FITTINGS					
ABOVE OR BELOW					
TELECOMMUNICATION CABLES/CONDUITS/DUCT BANKS	4	4	4	4	2
FIBER OPTIC CABLES/CONDUITS/DUCT BANKS	4	4	4	4	2
UNDERGROUND ELECTRIC CONDUITS/DUCT BANKS	4	4	4	4	2
MANHOLES/STRUCTURES/HAND HOLE (HH) BOXES	4	4	4	4	2

\*SEPARATION BASED UPON MAXIMUM DEPTH OF 8-FEET. STORM SEWER PLACED BELOW THIS DEPTH WILL REQUIRE INDIVIDUAL REVIEW.

**PROPOSED EQUIPMENT KEYNOTES:**

- ① (3) SAMSUNG AT1K01 INSIDE SHROUD
- ② (1) DISCONNECT/LOAD CENTER INSIDE CONCEALMENT BASE
- ③ (1) NEMA 3R RATED FIBER BOX(NID) INSIDE CONCEALMENT BASE
- ④ (1) SET OF SUPPLY CONDUCTORS FROM POWER SOURCE TO DISCONNECT/LOAD CENTER
- ⑤ (1) GROUNDING CONDUCTOR FROM EQUIPMENT TO GROUND ROD TO BE ROUTED INSIDE POLE
- ⑥ (1) FIBER AND (1) POWER CABLES TO EACH ANTENNA SHALL BE INSTALLED INSIDE POLE
- ⑦ (1) 8" STANDARD(8.625" O.D. X 0.322" THICK) PIPE
- ⑧ (1) OMNI MOUNT
- ⑨ (1) FIBER CONDUIT FROM FIBER SOURCE TO FIBER NID BOX
- ⑩ (1) INVISIWAVE RADOME
- ⑪ (1) CONCEALMENT BASE. 18" STANDARD(0.375" THICK) PIPE
- ⑫ (1) 7' LONG X 3' DIAMETER CONCRETE PIER. SEE FOUNDATION REPORT FOR DETAILS
- ⑬ (1) OMNI ANTENNA
- ⑭ (1) RECTIFIER INSIDE CONCEALMENT BASE
- ⑮ (1) SAMSUNG RFV4402D-D1A INSIDE CONCEALMENT BASE

**INSTALLATION NOTES:**

- SEE SHEET 2 FOR INSTALLATION NOTES.

**DESIGN NOTES:**

- SEE FOUNDATION REPORT FOR DETAILS.
- STRUCTURAL ANALYSIS REPORT WAS DONE BY OTHERS.
- MAX POWER CONSUMPTION OF CONFIGURATION IS 3105 WATTS.
- SEE RFDS SHEET FOR ANTENNA AZIMUTHS.

**COMPONENT SCHEDULE:**

POLE TOP TOTAL WEIGHT = 111.64 LBS

- (3) SAMSUNG AT1K01 INSIDE SHROUD 9.87"W X 19.41"H X 6.89"D - 33.07 LBS EACH X 3 = (99.21 LBS TOTAL)
- (1) OMNI ANTENNA 23.62"H X 7.87" Ø - 15.43 LBS

**COMPONENT SCHEDULE:**

POLE BASE TOTAL WEIGHT = 83.55 LBS

- (1) GE RECTIFIER UNIT (AC-DC CONVERSION) 9.5"W X 17"H X 4.4"D - 20.75 LBS
- (1) RADIO UNIT (SAMSUNG RFV4402D-D1A) 11.81"W X 18.74"H X 8.86"D - 62.80 LBS

**NOTES**

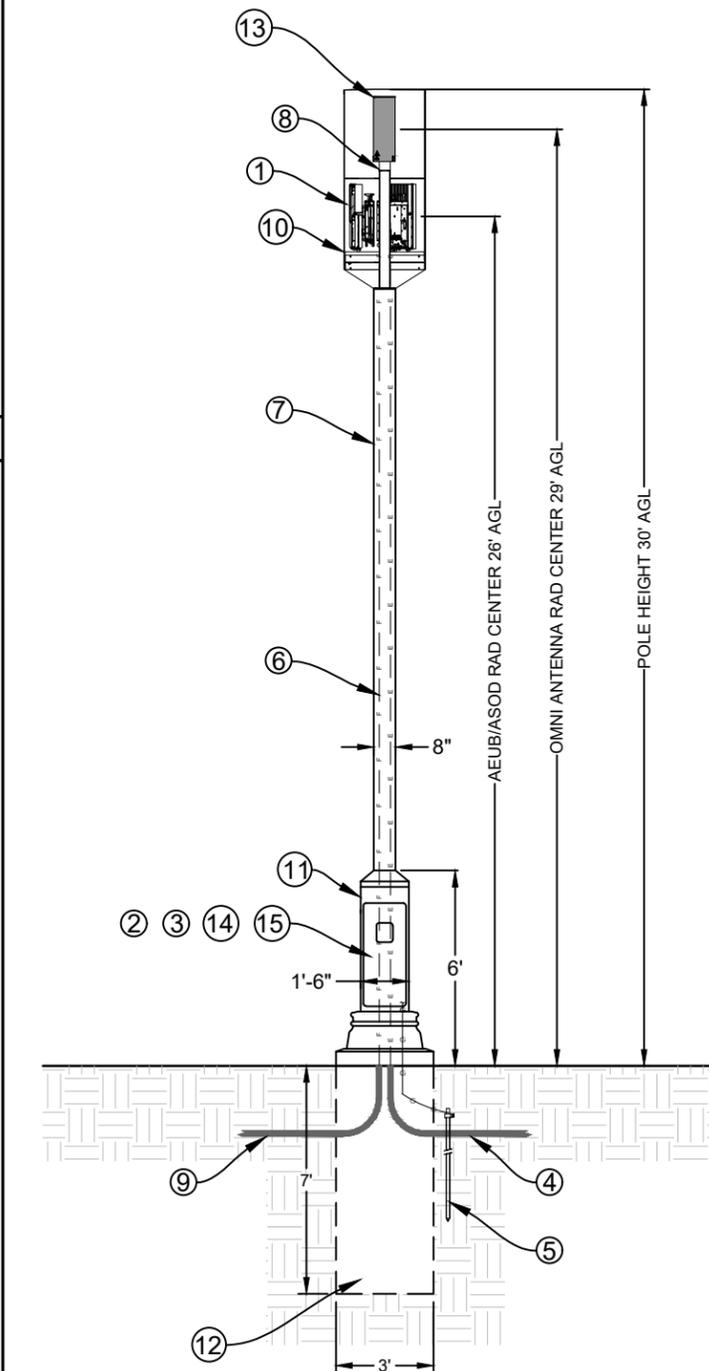
**1**



PROPOSED LOCATION OF BLACK METAL STEALTH POLE

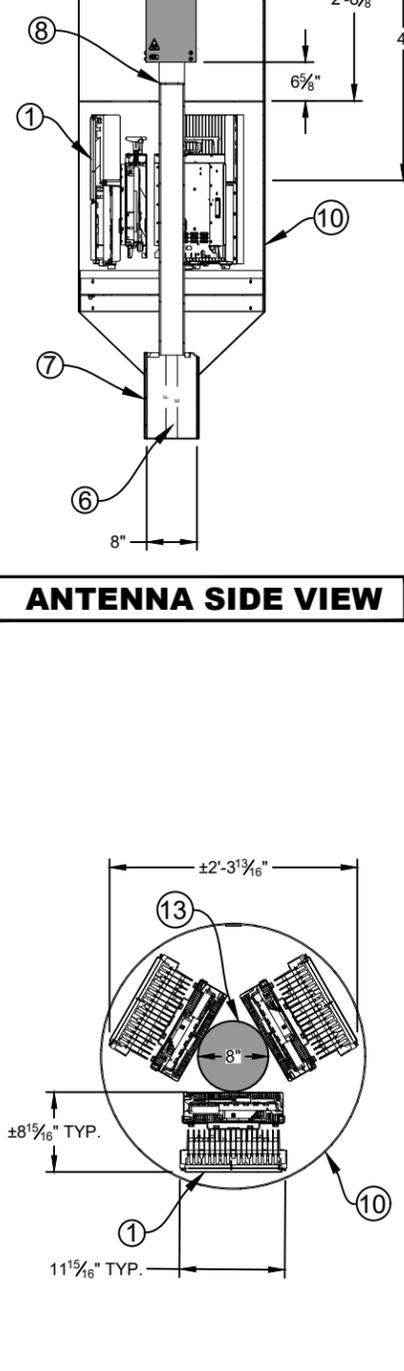
**2**

**PROPOSED METAL POLE (NOT TO SCALE)**



**3**

**ANTENNA PLAN VIEW**



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 IRVING, TX 75038  
 972-444-5365

PLANS PREPARED BY:  
**VERTICOM**  
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 PHONE: (214) 741-6898

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 HOUSTON, TX 77042  
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 COA # 6827

SPECIAL NOTES:  
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 OKLAHOMA COUNTY

SHEET DESCRIPTION:  
**POLE ELEVATION AND ANTENNA PLAN**

SHEET NUMBER:  
**6 OF 15**

**EXISTING LOCATION OF PROPOSED METAL POLE**



**EXISTING LOCATION LOOKING NORTHEAST**



**EXISTING LOCATION WITH POLE SIMULATION**

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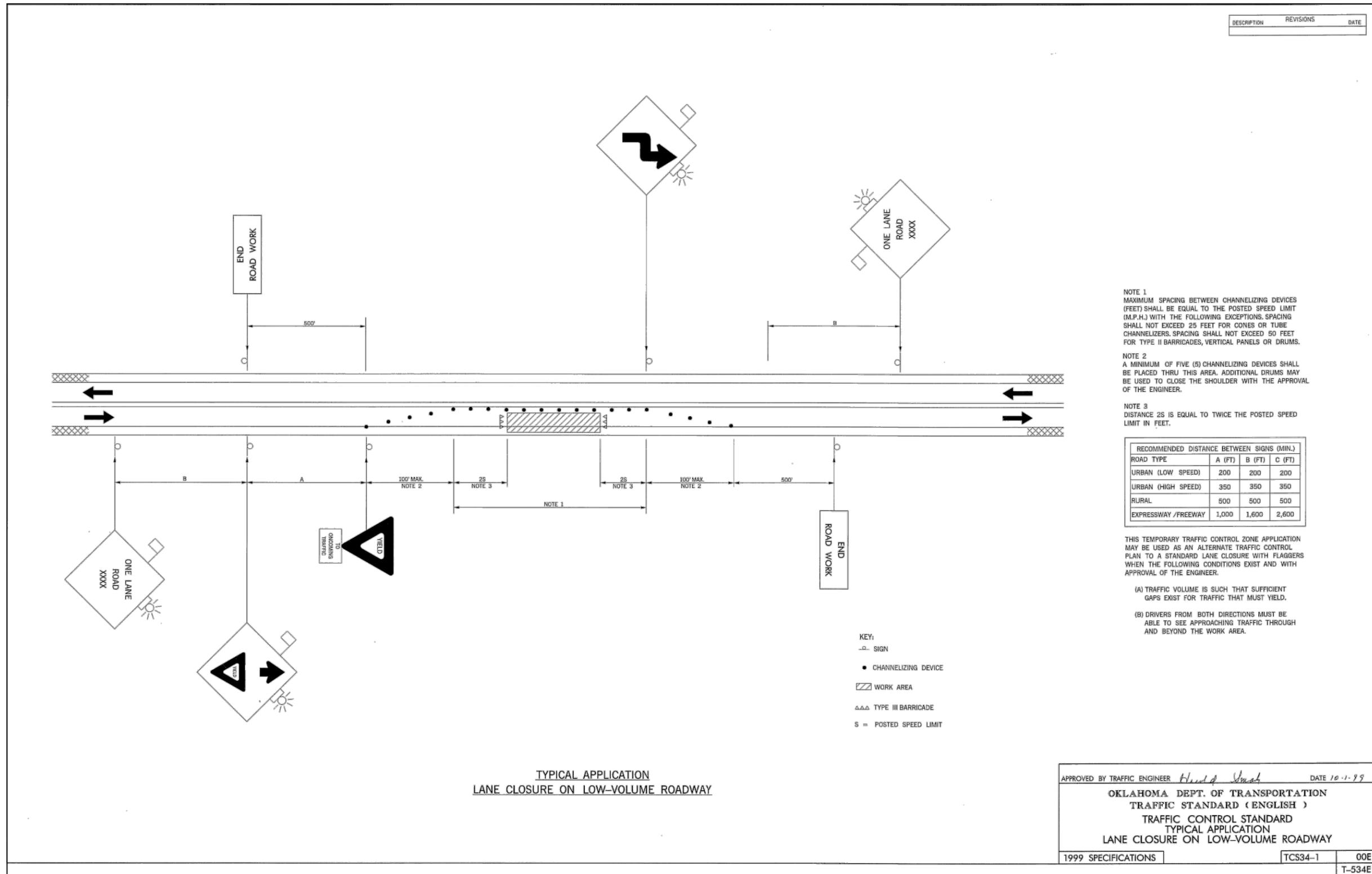
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SHEET DESCRIPTION:  
**PHOTO SIMULATIONS**

SHEET NUMBER:  
**7 OF 15**



DESCRIPTION	REVISIONS	DATE

**NOTE 1**  
MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES (FEET) SHALL BE EQUAL TO THE POSTED SPEED LIMIT (M.P.H.) WITH THE FOLLOWING EXCEPTIONS. SPACING SHALL NOT EXCEED 25 FEET FOR CONES OR TUBE CHANNELIZERS. SPACING SHALL NOT EXCEED 50 FEET FOR TYPE II BARRICADES, VERTICAL PANELS OR DRUMS.

**NOTE 2**  
A MINIMUM OF FIVE (5) CHANNELIZING DEVICES SHALL BE PLACED THRU THIS AREA. ADDITIONAL DRUMS MAY BE USED TO CLOSE THE SHOULDER WITH THE APPROVAL OF THE ENGINEER.

**NOTE 3**  
DISTANCE 2S IS EQUAL TO TWICE THE POSTED SPEED LIMIT IN FEET.

RECOMMENDED DISTANCE BETWEEN SIGNS (MIN.)			
ROAD TYPE	A (FT)	B (FT)	C (FT)
URBAN (LOW SPEED)	200	200	200
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY /FREEWAY	1,000	1,600	2,600

THIS TEMPORARY TRAFFIC CONTROL ZONE APPLICATION MAY BE USED AS AN ALTERNATE TRAFFIC CONTROL PLAN TO A STANDARD LANE CLOSURE WITH FLAGGERS WHEN THE FOLLOWING CONDITIONS EXIST AND WITH APPROVAL OF THE ENGINEER.

- (A) TRAFFIC VOLUME IS SUCH THAT SUFFICIENT GAPS EXIST FOR TRAFFIC THAT MUST YIELD.
- (B) DRIVERS FROM BOTH DIRECTIONS MUST BE ABLE TO SEE APPROACHING TRAFFIC THROUGH AND BEYOND THE WORK AREA.

- KEY:**
- SIGN
  - CHANNELIZING DEVICE
  - ▨ WORK AREA
  - △△△ TYPE III BARRICADE
  - S = POSTED SPEED LIMIT

APPROVED BY TRAFFIC ENGINEER *Hudq Umah* DATE 10-1-22

**OKLAHOMA DEPT. OF TRANSPORTATION  
TRAFFIC STANDARD ( ENGLISH )  
TRAFFIC CONTROL STANDARD  
TYPICAL APPLICATION  
LANE CLOSURE ON LOW-VOLUME ROADWAY**

1999 SPECIFICATIONS TCS34-1 00E  
T-534E

PLANS PREPARED FOR:

**verizon**  
600 HIDDEN RIDGE  
IRVING, TX 75038  
972-444-5365

PLANS PREPARED BY:

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DESIGNED BY: JAS

REVISIONS:

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ENGINEERING SEAL:

**MANSOUR SHIRVANI**  
26670  
11/16/20

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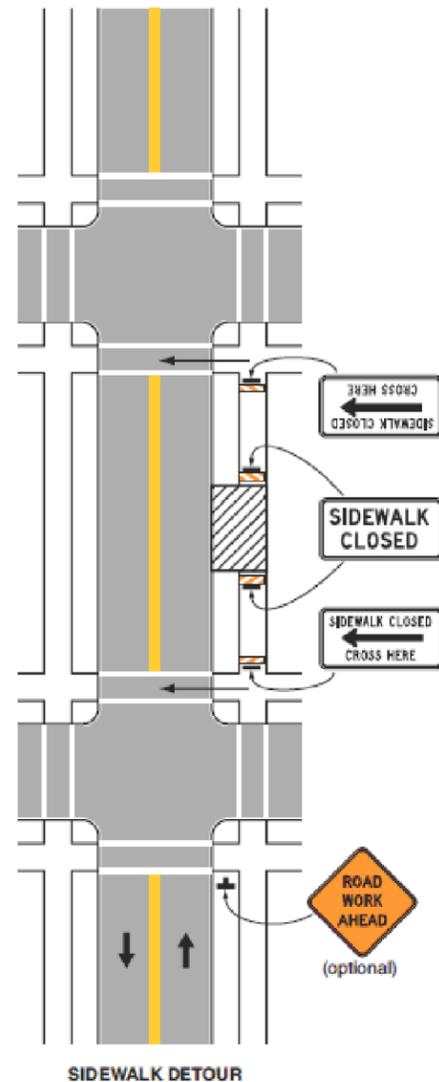
SHEET DESCRIPTION:

**TRAFFIC CONTROL  
PLAN FOR NODE**

SHEET NUMBER:

**8 OF 15**

- ALL CHANNELIZING DEVICES SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES(MUTCD).
- ALL TRAFFIC CONTROL DEVICES SHALL HAVE WORKING VISIBLE WARNING LIGHTS AS REQUIRED IN ACCORDANCE WITH THE CURRENT EDITION OF MUTCD.
- FOR TEMPORARY SITUATIONS, WHEN IT IS NOT FEASIBLE TO REMOVE AND RESTORE PAVEMENT MARKINGS, CHANNELIZATION MUST BE MADE DOMINANT BY USING A VERY CLOSE DEVICE SPACING. THIS IS ESPECIALLY IMPORTANT IN LOCATIONS OF CONFLICTING INFORMATION, SUCH AS WHERE TRAFFIC IS DIRECTED OVER A DOUBLE YELLOW CENTERLINE. IN SUCH LOCATIONS, CHANNELIZING DEVICE SPACING OF 10 FEET IS REQUIRED.
- FOR LONG TERM STATIONARY WORK, ALL CONFLICTING PAVEMENT MARKINGS MUST BE REMOVED AND CENTERLINE STRIPING PROVIDED WHERE TWO WAY TRAFFIC IS IN ADJACENT LANES.
- CONTRACTOR SHALL PROVIDE SIDEWALK CLOSURE, CROSSWALK CLOSURE AND/OR WALKWAY BYPASS WHEREVER PEDESTRIAN MOVEMENTS ARE AFFECTED BY CONSTRUCTION ACTIVITIES. ALL SIDEWALKS AND CROSSWALKS SHALL BE ACCESSIBLE WHEN CONTRACTOR IS NOT WORKING UNLESS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE USE OF TRAILER MOUNTED ARROW DISPLAYS MAY BE REQUIRED ON ALL LANE CLOSURES. THE CONTRACTOR SHALL PROVIDE ONE(1) STAND-BY UNIT IN GOOD WORKING CONDITION AT THE JOB SITE, READY FOR USE, IF HIS OPERATION REQUIRES 24-HOUR A DAY CLOSURE SET-UPS AND IF REQUIRED.
- CITY TRAFFIC ENGINEER AND/OR INSPECTORS MAY REQUIRE ADDITIONAL TRAFFIC CONTROL DEVICES.
- EXTEND CHANNELIZATION DEVICES INTO SHOULDER WHERE APPLICABLE.
- DISTANCES NOTES IN PLAN SHOULD BE INCREASED FOR CONDITIONS THAT WOULD AFFECT STOPPING.
- MAINTAIN A MINIMUM LANE WIDTH OF 10'.
- FLAGGERS SHALL BE IN CONSTANT RADIO CONTACT.
- NO CONGREGATING AROUND FLAGGER STATIONS.
- CONTRACTOR TO VERIFY POSTED SPEED LIMIT.
- THE SIDEWALK ON SIDE WHERE WORK WILL BE DONE SHALL BE CLOSED TO PEDESTRIANS DURING CONSTRUCTION.
- ALL TEMPORARY TRAFFIC CONTROL SIGNAGE, LAYOUTS AND PROCEDURES SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS AND THE LATEST EDITION OF MUTCD, WHICHEVER IS MORE STRINGENT.
- PRIOR TO ANY CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
- TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
- TAPER SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.
- THERE SHALL BE NO WORKERS, EQUIPMENT, OR OTHER VEHICLE IN THE BUFFER SPACE OR THE ROLL AHEAD SPACE.
- DRIVEWAYS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-1 SIGN (UTILITY WORK AHEAD) AS A MINIMUM.
- CONES MAY BE SUBSTITUTED FOR BARRELS/DRUMS AND INSTALLED UPON THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION PROVIDED THEY COMPLY WITH MUTCD.
- FOR LONG-TERM STATIONARY WORK, THE DOUBLE YELLOW CENTER LINE AND/OR LANE LINES SHOULD BE REMOVED BETWEEN THE CROSSWALK LINES.
- CONTRACTOR TO COMPLY WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES(MUTCD)
- PLACE VEHICLE IN BETWEEN AERIAL LIFT/TOW-BEHIND AND THE ONCOMING TRAFFIC WHEN POSSIBLE.
- WORK ZONE PERMIT MUST BE OBTAINED FROM THE TRAFFIC MANAGEMENT DIVISION AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF WORK AND/OR PLACEMENT OR REMOVING OF ANY BARRICADES OR MODIFYING EXISTING TRAFFIC CONTROL DEVICES. EMAIL WORKZONE@OKC.GOV



**PEDESTRIAN CONTROL NOTES:**

- HOLES, TRENCHES OR OTHER HAZARDS SHALL BE ADEQUATELY PROTECTED BY COVERING, DELINEATING OR SURROUNDING THE HAZARD WITH ORANGE PLASTIC PEDESTRIAN FENCING OR LONGITUDINAL CHANNELIZING DEVICES, OR AS DIRECTED BY THE ENGINEER.
- "CROSSWALK CLOSURES" AS DETAILED ABOVE WILL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO INSTALLATION.
- R9 SERIES SIGNS SHOWN MAY BE PLACED ON SUPPORTS DETAILED ON THE BC STANDARDS OR CWZTC LIST, OR WHEN FABRICATED FROM APPROVED LIGHTWEIGHT PLASTIC SUBSTRATES, THEY MAY BE MOUNTED ON TOP OF A PLASTIC DRUM AT OR NEAR THE LOCATION SHOWN.
- FOR SPEEDS LESS THAN 45 MPH LONGITUDINAL CHANNELIZING DEVICES MAY BE USED INSTEAD OF TRAFFIC BARRIERS WHEN APPROVED BY THE ENGINEER. ATTENUATION OF BLUNT ENDS AND INSTALLATION OF WATER FILLED DEVICES SHALL BE AS PER BC (9) AND MANUFACTURER'S RECOMMENDATIONS.
- LOCATION OF DEVICES ARE FOR GENERAL GUIDANCE. ACTUAL DEVICE SPACING AND LOCATION MUST BE FIELD ADJUSTED TO MEET ACTUAL CONDITIONS.
- WHERE PEDESTRIANS WITH VISUAL DISABILITIES NORMALLY USE THE CLOSED SIDEWALK DETECTABLE PEDESTRIAN BARRICADES SHOULD BE USED INSTEAD OF THE TYPE 3 BARRICADES SHOWN.
- THE WIDTH OF EXISTING SIDEWALK SHOULD BE MAINTAINED IF PRACTICAL.
- PAVEMENT MARKINGS FOR MID-BLOCK CROSSWALKS SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS.
- WHEN CROSSWALKS OR OTHER PEDESTRIAN FACILITIES ARE CLOSED OR RELOCATED, TEMPORARY FACILITIES SHALL BE DETECTABLE AND SHALL INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.

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 (281) 797-4387  
 COA # 6827

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ENGINEERING SEAL:  
  
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 26670  
 OKLAHOMA  
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 OKLAHOMA COUNTY

SHEET DESCRIPTION:  
**TCP NOTES AND  
 DETAILS AND  
 PEDESTRIAN CONTROL**

SHEET NUMBER:

**9 OF 15**

**TRAFFIC CONTROL GENERAL NOTES**

**1 PEDESTRIAN CONTROL**

**2**

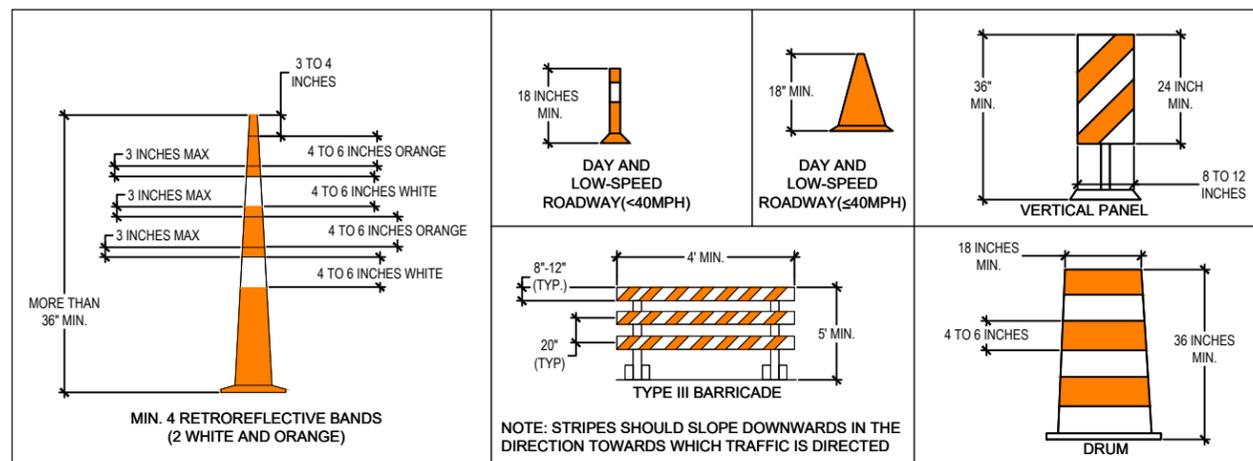
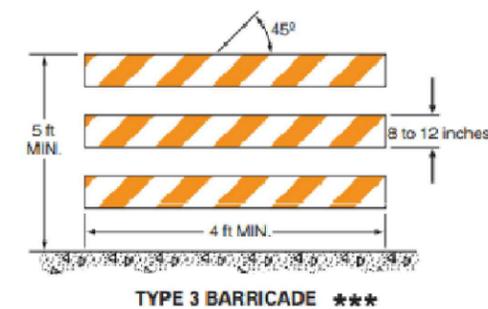
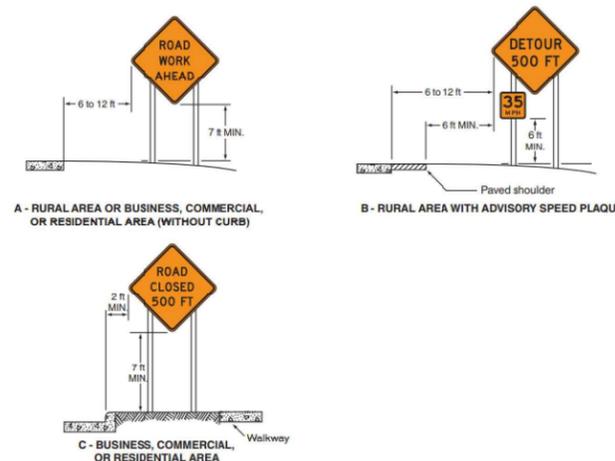
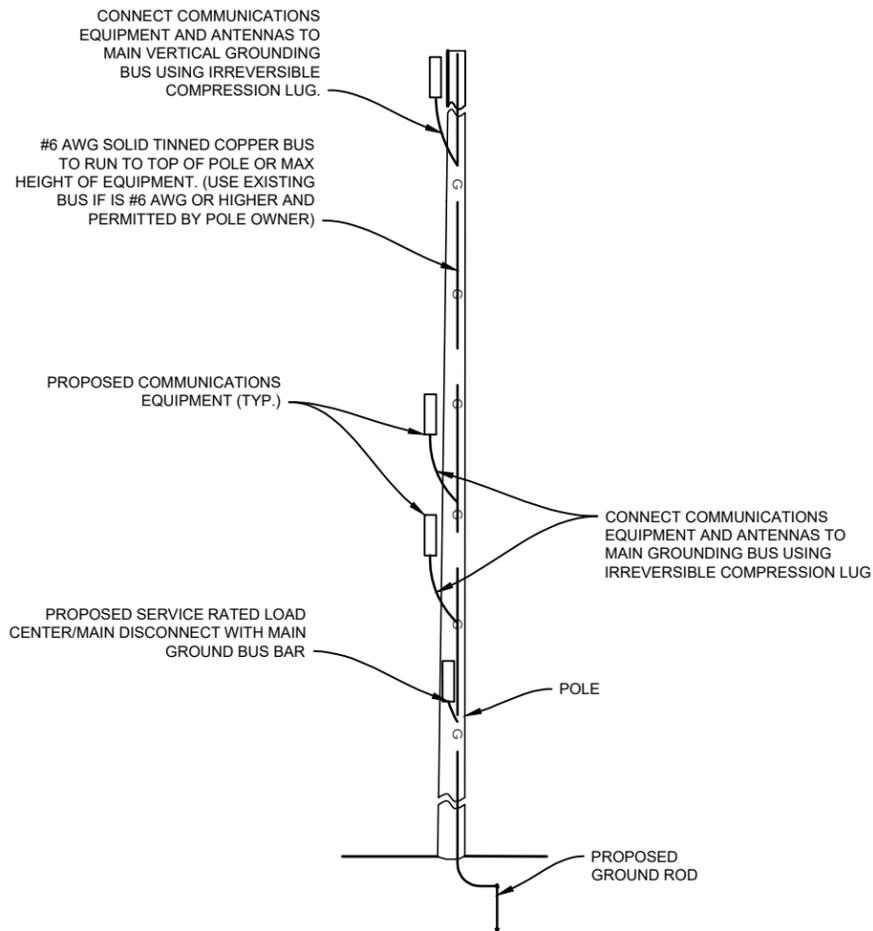


Figure 6F-1. Height and Lateral Location of Signs—Typical Installations



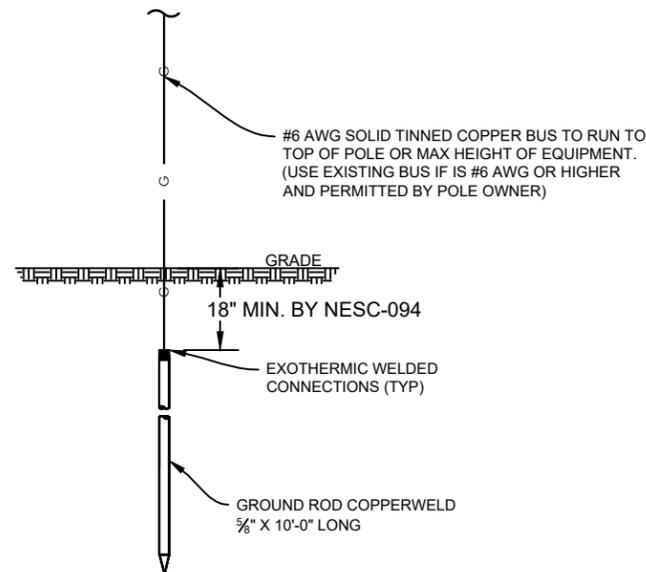
\*\*\* RAIL STRIPE WIDTHS SHALL BE 6 INCHES, EXCEPT THAT 4-INCH WIDE STRIPES MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36 INCHES. THE SIDES OF BARRICADES FACING TRAFFIC SHALL HAVE RETROREFLECTIVE RAIL FACES.

**SIGNS AND CHANNELIZING DEVICES**



**POLE BUS GROUNDING DETAIL**

SCALE: N.T.S.



**GROUND ROD AND BUS DETAIL**

SCALE: N.T.S.

**ELECTRICAL NOTES**

- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR 2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (12 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS. LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT ON LESS THAN 75°C (90°C IF AVAILABLE).
- GRAY SCHEDULE 40 CONDUIT SHALL BE USED UNDERGROUND.
- GRAY SCHEDULE 80 CONDUIT SHALL BE USED FOR RISERS.
- RISERS SHALL BE ATTACHED TO POLE WITH STANDARD U-CLAMPS AND LAG SCREWS.
- RISER U-CLAMPS TO BE INSTALLED EVERY 5'.
- GROUND WIRE MOLDING STAPLES MAY BE UTILIZED FOR ATTACHING CONDUIT LESS THAN 1" DIAMETER.
- ALL CONDUIT SHALL BE PROOFED WITH A MANDREL AND EQUIPPED WITH A PULL ROPE OR MULE TAPE.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY PRIOR BEGINNING ANY ERECTION OF POLES OR STRUCTURES LOCATED NEAR ANY OVERHEAD OR UNDERGROUND UTILITIES.
- CONTRACTOR SHALL COORDINATE WITH ELECTRIC COMPANY TO DE-ENERGIZE ANY OVERHEAD OR UNDERGROUND EQUIPMENT.
- ELECTRICAL WORK SHALL BE PERFORMED BY CERTIFIED PERSONS IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION WHERE THE PROJECT IS LOCATED.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, CODES, ORDINANCES AND REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND PAYMENT OF ANY ELECTRICAL INSPECTION THAT MAY BE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
- THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- WIRING LENGTHS SHALL BE SUCH THAT VOLTAGE DROP DOES NOT EXCEED THAT ALLOWED BY NATIONAL ELECTRIC CODE.
- EQUIPMENT CIRCUITS (BREAKERS, WIRES) MAY VARY PER TECHNOLOGY AND EQUIPMENT REQUIREMENTS.
- LOAD CENTER/ MAIN DISCONNECT DESCRIPTION:

- PROPOSED SERVICE RATED LOAD CENTER 120/240V, 1φ3W, NEMA 3R, 100 AMPS RATED, WITH 8 SPACES MIN. 10KAIC MIN. APPROVED OR EQUAL TO SQUARE D QO816L100RB.
- USE 60 AMPS MAIN BREAKER IN FIRST 2 SLOTS FOR SERVICE ENTRANCE WIRES. APPROVED OR EQUAL TO SQUARE D QO260. MARK AS MAIN OR SERVICE DISCONNECT.
- INCLUDE SERVICE BARRIER TO MAIN BREAKER. APPROVED OR SIMILAR TO SQUARE D PKSB1Q0BF.
- FOLLOW LOAD CENTER INSTALLATION INSTRUCTIONS FOR THE GREEN SCREW FOR GROUND BONDING.
- COORDINATE WITH ELECTRIC SERVICE PROVIDER IF LOAD CENTER/ MAIN DISCONNECT NEEDS TO BE SECURE WITH PROVIDER'S APPROVED LOCK.

**GROUNDING NOTES**

- GROUND RODS SHALL BE 5/8"X10'. ATTACHMENT TO GROUND RODS SHALL BE EXOTHERMIC WELD OR UL LISTED DIRECT BURY CLAMP BELOW GRADE.
- MOLDING SHALL BE STAPLED EVERY 1' AND AT EACH END.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (12 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND IEEE 91) FOR NEW GROUND ELECTRODE SYSTEMS. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS, FOLLOWING NEC 250.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO EQUIPMENT.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- EACH EQUIPMENT CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER.
- ALL MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE MAIN GROUND, IN ACCORDANCE WITH THE NEC.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS. SHALL BE CONDUCTOR SPECIFIC AND MUST FOLLOW THE MANUFACTURER'S INSTRUCTIONS.

PLANS PREPARED FOR:

600 HIDDEN RIDGE  
IRVING, TX 75038  
972-444-5385

PLANS PREPARED BY:

7901 AMBASSADOR ROW  
DALLAS, TX 75247  
PHONE: (214) 741-6898

PLANS PREPARED BY:

10006 LYNBROOK DR.  
HOUSTON, TX 77042  
(281) 797-4387  
COA # 6827

SPECIAL NOTES:

CALL OKLAHOMA ONE CALL  
(800) 522-OKIE  
CALL 3 WORKING DAYS  
BEFORE YOU DIG!

DRAWN BY: AS      REVIEWED BY: JAS  
DESIGNED BY: JAS

REVISIONS:

REV	DATE	DESCRIPTION	BY
0	10/27/2020	PRELIM CDs	AS
1	11/11/2020	VERTICOM COMMENTS	AS
2	11/16/2020	SUBMITTAL TO CITY	TH

ENGINEERING SEAL:

11/16/20  
COA 6827  
Aria Services, Inc.

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SITE INFO:

**OK OKC UNIVERSITY NORTH 044**  
4020 N WESTERN AVE. UNIT SC,  
OKLAHOMA CITY, OK 73118  
35.511990°, -97.529734°  
OKLAHOMA COUNTY

SHEET DESCRIPTION:

**GROUNDING  
DETAILS AND NOTES**

SHEET NUMBER:

**10 OF 15**

# NOTICE



### Transmitting Antenna(s)

Radio frequency fields beyond this point **MAY EXCEED** the FCC General Population exposure limit.

Obey all posted signs and site guidelines.

Call Verizon at 1-800-264-6620 **PRIOR** to working beyond this point.

STATE: \_\_\_\_\_ SWITCH: \_\_\_\_\_

SITE ID: \_\_\_\_\_

SECTOR/NODE: \_\_\_\_\_



**PLACE 6 FEET BELOW BOTTOM OF ANTENNAS**

# INFORMATION

This is an **ACCESS POINT** to an area with transmitting antennas.

Obey all postings and boundaries beyond this point.

Call Verizon at 1-800-264-6620 for more information.

STATE: \_\_\_\_\_ SWITCH: \_\_\_\_\_

SITE ID: \_\_\_\_\_



**PLACE 8 FEET ABOVE GROUND**

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**VERTICOM**  
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 OKLAHOMA COUNTY

SHEET DESCRIPTION:  
**WARNING AND ID STICKERS**

SHEET NUMBER:  
**11 OF 15**

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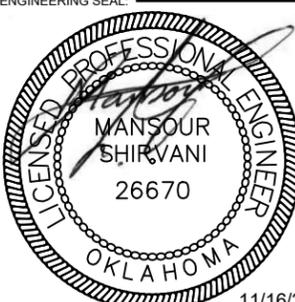
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SHEET DESCRIPTION:  
**SAMSUNG AT1K01 ANTENNA**

SHEET NUMBER:  
**12 OF 15**

Unit: in. (mm)

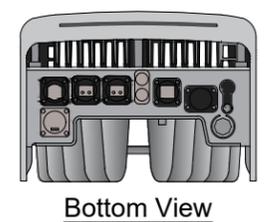
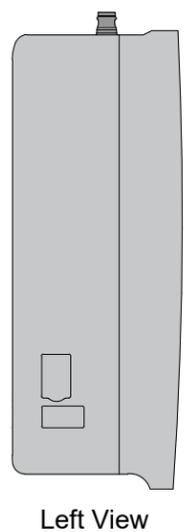
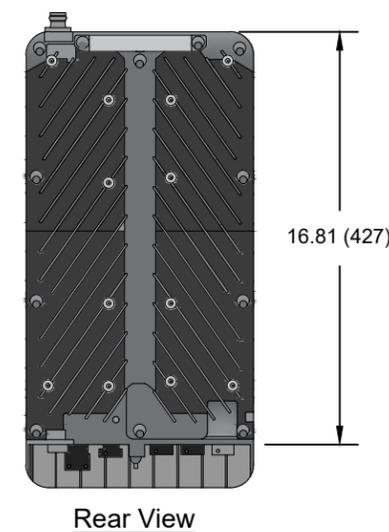
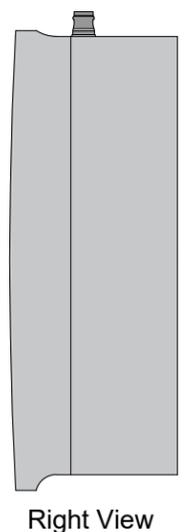
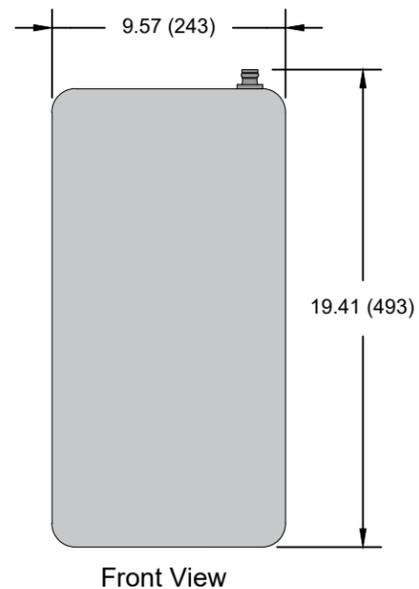
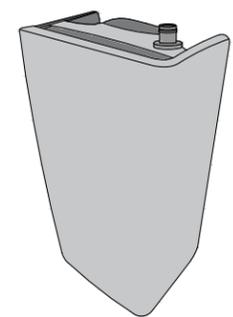
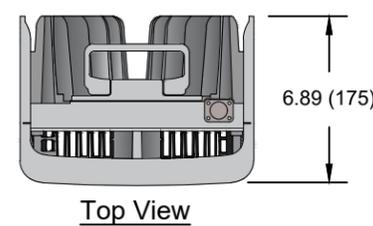


Table 1. Specifications

Item	AT1K01
Technology	5G NR
Operating Frequency	27.5 to 28.35 GHz
Input Voltage	-48 V DC (-36 to -58 V DC) or 100 to 240 V AC
LED	Total: 1 EA Powered, Operational, Fail (3 Status w/different colors)
Operational Temperature	-40~55°C (with solar load)
Humidity	TBD
IP rating	IP65
EMC	FCC Title 47 CFR Part 15 Subpart B
Safety	UL 60950 or 62368
Installation	Pole/Wall/Tower mounting
Dimension (W x D x H)	<ul style="list-style-type: none"> <li>9.57 in. (243 mm) x 6.89 in. (175 mm) x 16.81 in. (427 mm) •(@without cover)</li> <li>9.57 in. (243 mm) x 6.89 in. (175 mm) x 19.4 in. (493 mm) (@with cover &amp; GPS Port)</li> </ul>
Volume	< 18.16 L
Weight	< 33.07 lb (15.8 kg)

# VVSSP-360S-F



10-port small cell antenna, 4x 1695–2690, 4x 3400–3800 and 2x 5150–5925 MHz. 360° Horizontal Beamwidth, fixed tilt.

## General Specifications

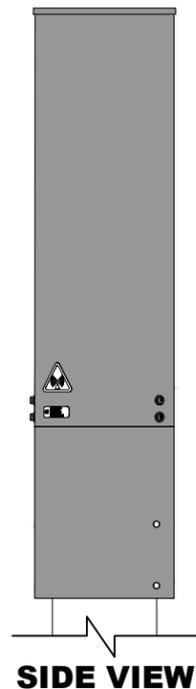
<b>Antenna Type</b>	Small Cell
<b>Band</b>	Multiband
<b>Grounding Type</b>	RF connector inner conductor and body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage   Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
<b>RF Connector Interface</b>	4.3-10 Female
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, high band</b>	10
<b>RF Connector Quantity, total</b>	10

## Dimensions

<b>Length</b>	600 mm   23.622 in
<b>Outer Diameter</b>	200 mm   7.874 in

## 5 GHz Port Power Table

5 GHz FCC Power Requirements				
U-NII Band	U-NII 1	U-NII 2A	U-NII 2C	U-NII 3
Frequency (MHz)	5150 - 5250	5250 - 5350	5470 - 5725	5725 - 5850
Max Input power per port to align with FCC Title 47 Part 15 (Watts)	0.5	0.125	0.125	0.5



**SIDE VIEW**

## Electrical Specifications

<b>Impedance</b>	50 ohm
<b>Operating Frequency Band</b>	1695 – 2690 MHz   3400 – 3800 MHz   5150 – 5925 MHz
<b>Total Input Power, maximum</b>	300 W @ 50 °C

## Electrical Specifications

Frequency Band, MHz	1695–1920	1920–2180	2300–2690	3400–3800	5150–5925
<b>Gain, dBi</b>	6.6	7.3	8.2	4.9	5.1
<b>Beamwidth, Horizontal, degrees</b>	360	360	360	360	360
<b>Beamwidth, Vertical, degrees</b>	21.9	19.1	15.6	39	22.4
<b>Beam Tilt, degrees</b>	7	7	7	0	0
<b>USLS (First Lobe), dB</b>	14	14	12	19	9
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25
<b>Isolation, Inter-band, dB</b>	28	28	28	28	28
<b>VSWR   Return loss, dB</b>	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-153	-153	-150		
<b>Input Power per Port, maximum, watts</b>	125	125	125	35	20

## Electrical Specifications, BASTA

Frequency Band, MHz	1695–1920	1920–2180	2300–2690	3400–3800	5150–5925
<b>Gain by all Beam Tilts, average, dBi</b>	6.3	7.1	7.9	4.7	4.4
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.6	±0.5	±0.5	±0.3	±1.1
<b>Beamwidth, Vertical Tolerance, degrees</b>	±2	±2.3	±1.5	±5.7	±6.5

## Material Specifications

<b>Radiator Material</b>	Low loss circuit board
<b>Reflector Material</b>	Aluminum

## Mechanical Specifications

<b>Wind Loading at Velocity, frontal</b>	131.7 lbf @ 150 km/h   58.0 N @ 150 km/h
<b>Wind Loading at Velocity, maximum</b>	13.0 lbf @ 150 km/h   58.0 N @ 150 km/h
<b>Wind Speed, maximum</b>	241 km/h   149.75 mph

PLANS PREPARED FOR:

600 HIDDEN RIDGE  
IRVING, TX 75038  
972-444-5385

PLANS PREPARED BY:

7901 AMBASSADOR ROW  
DALLAS, TX 75247  
PHONE: (214) 741-8898

PLANS PREPARED BY:

WWW.ARIA-CORP.COM  
10006 LYNBROOK DR.  
HOUSTON, TX 77042  
(281) 797-4387  
COA # 6827

SPECIAL NOTES:

CALL OKLAHOMA ONE CALL  
(800) 522-OKIE  
CALL 3 WORKING DAYS  
BEFORE YOU DIG!

DRAWN BY: AS | REVIEWED BY: JAS  
DESIGNED BY: JAS

REVISIONS:

REV	DATE	DESCRIPTION	BY
0	10/27/2020	PRELIM CDs	AS
1	11/11/2020	VERIZON COMMENTS	AS
2	11/16/2020	SUBMITTAL TO CITY	TH

ENGINEERING SEAL:

11/16/20  
COA 6827  
Aria Services, Inc.

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SITE INFO:

**OK OKC UNIVERSITY NORTH 044**  
4020 N WESTERN AVE. UNIT SC,  
OKLAHOMA CITY, OK 73118  
35.511990°, -97.529734°  
OKLAHOMA COUNTY

SHEET DESCRIPTION:

**OMNI ANTENNA**

SHEET NUMBER:

**13 OF 15**

# fact sheet

## Electrical Specifications

### Input Voltage & Output Power

**Response to ac input voltage** Operates according to figure, turning on at all  $V_{in}$  above  $90V_{ac}$ . Output power  $1200W < 140V_{ac}$   
 $1600W > 175V_{ac}$   
 Output power follows linear path between defined points.

**Ac input current** 12A @  $120V_{ac}$   
 9A @  $208V_{ac}$

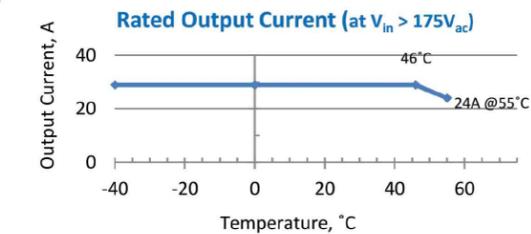
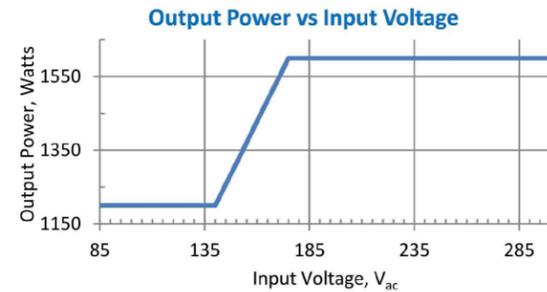
**Power Factor** 0.98@loads over 50%  
**THD** < 5% @loads over 50%  
**Harmonics** EN61000-3-2  
**Frequency** 45-66Hz or Dc

### Output

**$V_{out}$**  +42-58V<sub>dc</sub> range Default = 55.5 V<sub>dc</sub>  
 **$I_{out}$**  22A out @ low input line  
 29A out @ high input line

**Regulation** ± 0.5% w/controller, 2% over life load and temperature  
**Dynamic response** 20 to 80% load step settles to less than 1% in 5 ms  
**Ripple** 100 mV<sub>rms</sub>, 250 mV<sub>p-p</sub>

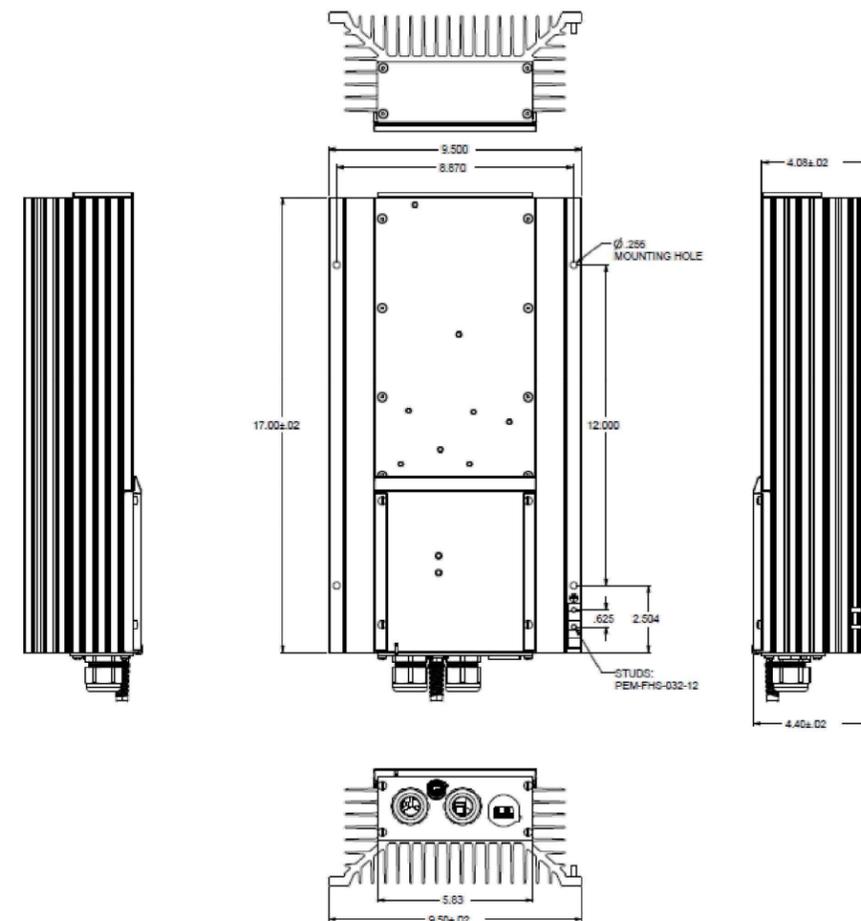
**Efficiency** Approaching 96%  
**Start up** Start up is monotonic  
**Walk in** Current walk in over 8 to 10 seconds  
**Overload shutdown** Shuts down with no damage when presented with a 15 milliohm short  
**Protection** Internally Fused



## Environmental, Compliance & Physical

Operating Ambient Temperature Range	-40°C to +46°C (Output derates at 2%/°C beginning at 46°C)
Cooling Method	Natural Convection
Operating Relative Humidity	0 - 95% (non-condensing) for use in a controlled environment
Electromagnetic Compatibility	FCC Part 15, EN 55032 (CISPR32), EN 55035, Level A, GR-1089
Lightning Surge	EN/IEC 61000-4-5 Level 4 (Error free), ANSI C62.41 Category B 100 kHz ring and 1.2/50µs combination waves (6kV damage free)
Agency Certifications*	ANSI/UL60950-1-2014, EN60950-1 2 <sup>nd</sup> ed+A1+A2, CAN/CSA C22.2 No. 60950-1-07 +Am2: 2014, NEBS GR-1089, GR-63-CORE, CE, RoHS6/6
Mean Time Between Failure (MTBF)	300k Hours @ 25°C per Telcordia SR-332, Method 1, Case 3
Height x Width x Depth, Weight, Packaged weight	17x9.5x4.4in (432x241x112mm), 20.75 lbs (9.4 kg)
Mounting	Pole, Wall, Pedestal, Shroud

## Physical Interface Dimensions



# fact sheet

PLANS PREPARED FOR:  
**verizon**  
 600 HIDDEN RIDGE  
 IRVING, TX 75038  
 972-444-5365

PLANS PREPARED BY:  
**VERTICOM**  
 IDEAS. SOLUTIONS. RESULTS.  
 7901 AMBASSADOR ROW  
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 PHONE: (214) 741-6898

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 WWW.ARIA-CORP.COM  
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 HOUSTON, TX 77042  
 (281) 797-4387  
 COA # 6827

SPECIAL NOTES:  
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 CALL 3 WORKING DAYS BEFORE YOU DIG!

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 DESIGNED BY: JAS

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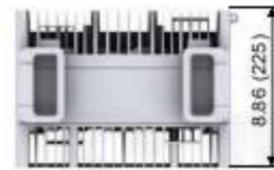
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SHEET DESCRIPTION:  
**RECTIFIER**

SHEET NUMBER:  
**14 OF 15**

Unit: in. (mm)



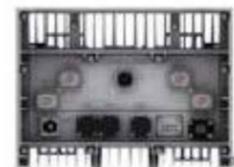
[Top View]



[Left View]



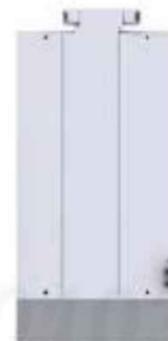
[Front View]



[Bottom View]



[Rear View]



[Right View]

Item	Specification	
Band	Band66 (AWS, 2.1GHz)	Band66 (PCS, 1.9GHz)
Frequency	DL : 2110~2180MHz	DL : 1930~1990MHz
	UL : 1710~1780MHz	UL : 1850~1910MHz
IBW	70MHz	60MHz
OBW	30MHz	20MHz
Carrier Bandwidth	5MHz, 10MHz, 15MHz, 20MHz	
# of carriers	3 Carriers	2 Carriers
Total # of carriers	4 carriers	
RF Chain	4T4R, 2T4R, 2T2R (SW configurable)	
RF Output Power	Total : 160W (for OBW 50MHz)	
	4 x 30W of 2 x 30W	4 x 20W of 2 x 20W
RX Sensitivity	Typical : -104.5dBm @1Rx (25RBs 5MHz)	
Modulation	DL 256QAM & UL 64QAM support (DL 1024QAM with 1~2dB Power Backoff)	
Input Power	-48VDC (-38VDC to -57VDC) : Default AC to DC converter (Option)	
Power Consumption	About 800Watt @ 100% RF load, typical conditions w/o RET and TMA About 849 Watt @ 100% RF load, typical conditions w/ RET and TMA	
Size (WHD)	300 x 380 x 235 mm (11.8" x 14.9" x 9.3") (w/ BAS OOBE)	
Volume	26.8 L	
Weight	28.5 kg (62.8 lb) (w/o Solar Shield & finger guard)	
Operating Temperature	-40°C (-40°F) ~ -55°C (131°F) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104 Category A	3GPP 36.104 Category A
	[B66] : FCC 47 CFR 27.53 h	[B2] : FCC 47 CFR 24.238
CPRI Cascade	Not supported	
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, Duplex/Bi-di	
# of antenna port	4	
External Alarm (UDA)	4	
RET	AISG 2.0	
Built-In Bias-T	Support	
Mounting Options	Pole, wall, tower, side by side, back to back	
NB-IoT (Guard Band)	Support (up to 4)	
Spectrum Analyzer	TR/RX Support	
PIM Cancellation	Support	
5G NR	Support with S/W upgrade	
eCPRI	Support with S/W upgrade	

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OKLAHOMA COUNTY

SHEET DESCRIPTION:  
**RADIO UNIT  
(SAMSUNG  
RFV4402D-D1A)**

SHEET NUMBER:  
**15 OF 15**



7555-A PALMETTO COMMERCE PARKWAY  
 NORTH CHARLESTON, SC 29420 USA  
 P: (800)-755-0689 / F: (843)-207-0207  
 WWW.STEALTHCONCEALMENT.COM  
 PROJECT MANAGER: STEPHEN BALL ; 843-614-8981

# FINAL ENGINEERING

# VERISON WIRELESS MIDWEST CITY OKLAHOMA COUNTY

STEALTH JOB #: VZ19-00505H-31R0

## DRAWING INDEX

T1	TITLE SHEET
N1-N2	NOTES & SPECIFICATIONS
S1-S2	4G/5G - ASSEMBLY - ELEVATIONS
S3-S4	5G - ASSEMBLY - ELEVATIONS
S5	ASSEMBLY - ELEVATIONS
S6	FOUNDATION

**NOTE:**  
 THE SPECIFIC LOCATION OF THE POLE WITHIN MIDWEST, OK HAS NOT BEEN PROVIDED. WIND SPEED, EXPOSURE, AND TOPOGRAPHIC CATEGORY USED IN THIS DESIGN MUST BE VERIFIED BY THE GOVERNING JURISDICTION PRIOR TO FABRICATION.



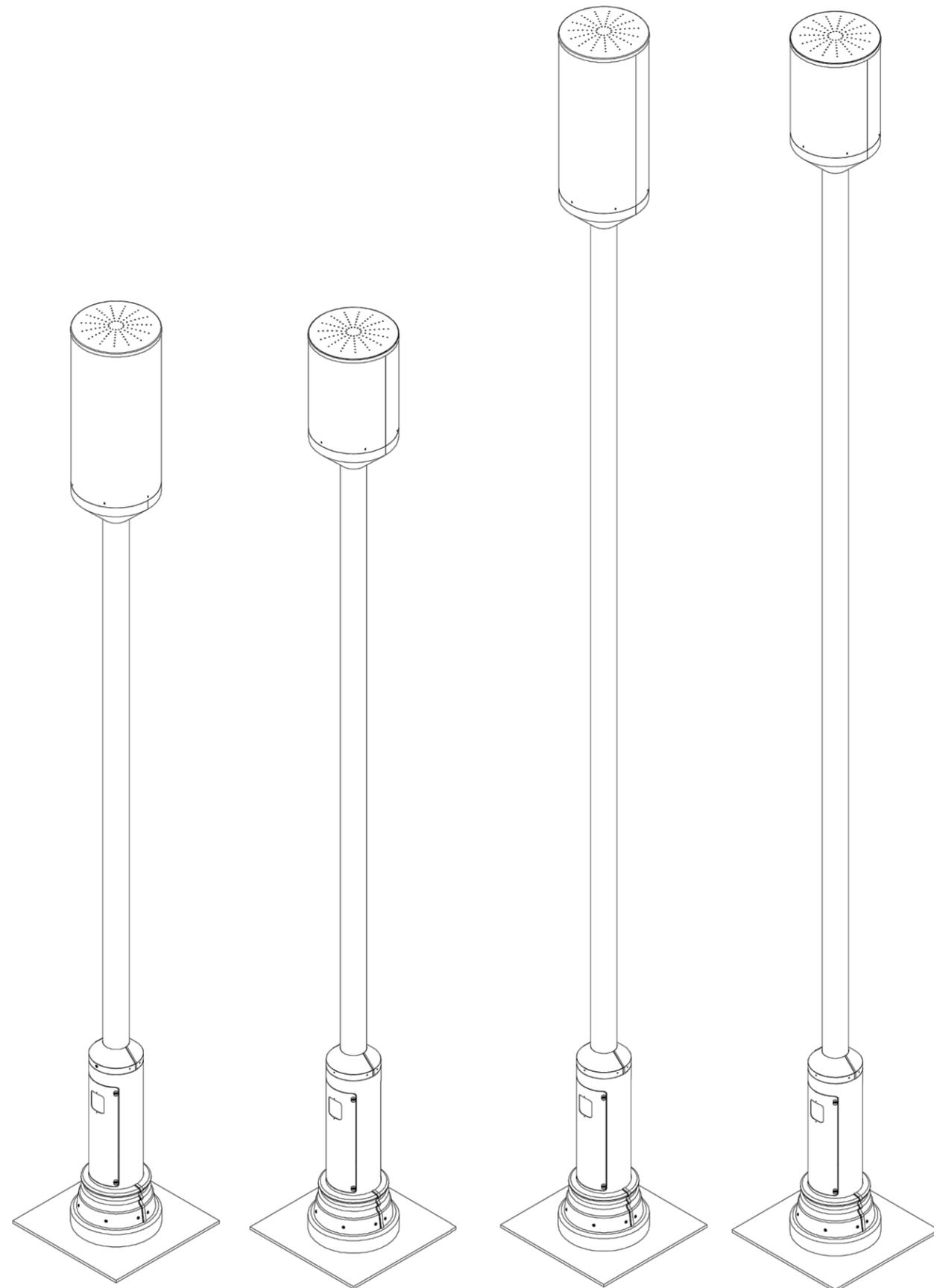
05/22/2019



T1

05-22-19

REVISION  
2



**DESIGN NOTES:**

STRUCTURAL DESIGN IS BASED ON THE INTERNATIONAL BUILDING CODE, 2015 EDITION & THE TIA-222-G STANDARD.

**DESIGN LOADS:**

**WIND:**

BASIC WIND SPEED: 115 MPH (3-SEC GUST) PER ASCE 7-10 STANDARD  
RISK CATEGORY / STRUCTURE CLASS : II  
EXPOSURE: C  
TOPOGRAPHIC CATEGORY: 1  
CREST HEIGHT: 0 FT  
ELEVATION: 1,261 FT ABOVE SEA LEVEL

ICE: 0.75" RADIAL ICE THICKNESS @ 40 MPH (3-SEC GUST)

**ESTIMATED WEIGHT:**

1.7 k (1.0 DEAD)

**REACTIONS:**

SHEAR, V = 0.8 k (1.0 WIND)  
AXIAL, P = 3.1 k (1.2 DEAD + 1.0 ICE)  
MOMENT, M = 20 k-ft (1.0 WIND)

THE REACTIONS V & M LISTED ABOVE SHALL BE CONSIDERED TO ACT IN ANY HORIZONTAL DIRECTION.



**DISCLAIMERS:**

1. ALL STRUCTURAL COMPONENTS TO BE CONNECTED TOGETHER SHALL BE COMPLETELY FIT UP ON THE GROUND OR OTHERWISE VERIFIED FOR COMPATIBILITY PRIOR TO LIFTING ANY COMPONENT INTO PLACE. REPAIRS REQUIRED DUE TO FIT-UP OR CONNECTION COMPATIBILITY PROBLEMS AFTER PARTIAL ERECTION ARE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.
2. ALTHOUGH RARE, EXCESSIVE DEFLECTION SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN SLIM LINE OR MONOPOLE STRUCTURES AT LOW WIND SPEEDS. BECAUSE THE PHENOMENON IS INFLUENCED BY MANY INTERACTING VARIABLES, MOVEMENT AND OSCILLATIONS ARE GENERALLY UNPREDICTABLE. THE TOWER OWNER MUST PERIODICALLY OBSERVE THE STRUCTURE FOR EXCESSIVE DEFLECTION AND ANY RESULTING STRUCTURAL DAMAGE OR BOLT LOOSENING. IN THE EVENT OF EXCESSIVE MOVEMENT, VECTOR STRUCTURAL ENGINEERS MUST BE NOTIFIED IMMEDIATELY. MODIFICATIONS TO THE STRUCTURE MAY BE REQUIRED AT THE OWNER'S EXPENSE. THE CHANGES MAY ALTER THE AESTHETIC APPEARANCE OF THE STRUCTURE.

**DESIGN:**

1. ENGINEERING AND DESIGN CALCULATIONS FOR STEALTH @ POLE AND TOWER PRODUCTS ARE PREPARED IN ACCORDANCE WITH THE TIA-222-G. OTHER STRUCTURES ARE DESIGNED IN ACCORDANCE WITH APPLICABLE LOCAL OR NATIONAL STANDARDS AND PER CLIENT INPUT.

**GENERAL**

1. THE TYPICAL NOTES SHALL APPLY FOR ALL CASES UNLESS OTHERWISE SPECIFICALLY DETAILED WITHIN THE DRAWINGS. SOME NOTES MAY NOT BE APPLICABLE IN PART OR IN WHOLE FOR EVERY PROJECT.
2. ANY ITEMS REFERENCED AS BEING ON "HOLD" ARE TO BE INCLUDED IN THE WORK AS SHOWN. HOWEVER, CONSTRUCTION OR FABRICATION IS NOT TO BEGIN UNTIL THE "HOLD" REFERENCE IS REMOVED.
3. DIMENSIONS CONTAINED WITHIN MUST BE FIELD VERIFIED AND CUSTOMER APPROVED PRIOR TO FABRICATION OF MATERIALS.
4. THE MODIFICATIONS DEPICTED IN THESE DRAWINGS ARE INTENDED TO PROVIDE STRUCTURAL SUPPORT FOR THE ADDITION OF THE ANTENNA SCREENING SYSTEMS OUTLINED WITHIN. THE EXISTING STRUCTURE OR BUILDING SHALL BE ANALYZED AND RETROFITTED AS REQUIRED, BY OTHERS, TO WITHSTAND THE LOADS IMPOSED BY THE NEW STEALTH @ ENCLOSURE SHOWN ON THE DRAWINGS.
5. ANTENNA CONCEALMENT PRODUCTS SHALL BE INSTALLED BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK. CARE SHALL BE TAKEN IN THE INSTALLATION OF ANY AND ALL MEMBERS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS AND PROCEDURES. ALL APPLICABLE OSHA SAFETY GUIDELINES ARE TO BE FOLLOWED. STEALTH @ IS NOT PROVIDING FIELD INSTALLATION SUPERVISION.
6. THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO BEGINNING OF WORK THE CONTRACTOR SHOULD SURVEY THE JOB SITE THOROUGHLY TO MINIMIZE FIELD PROBLEMS.
7. PROTECTION OF EXISTING STRUCTURES DURING THE COURSE OF THE CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. THE STRUCTURAL INTEGRITY OF THIS STRUCTURE IS DESIGNED TO BE ATTAINED IN ITS COMPLETED STATE. WHILE UNDER CONSTRUCTION ANY TEMPORARY BRACING OR SHORING WHICH MAY BE REQUIRED TO MAINTAIN STABILITY PRIOR TO COMPLETION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
9. THE PLANS AND DETAILS WITHIN DO NOT INCLUDE DETAILS OR DESIGN FOR DRAINAGE FROM OR WATERPROOFING OF EXTERIOR OR INTERIOR SURFACES OF THE EXISTING BUILDING OR STRUCTURE. THESE DETAILS MUST BE COMPLETED BY OTHERS.
10. CONTRACTOR TO SHIM BASEPLATE AS REQUIRED TO ENSURE LEVEL SURFACE.

**SPECIAL INSPECTIONS & STRUCTURAL OBSERVATION:**

1. STEEL FABRICATION SHALL BE DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED AS REQUIRED BY THE BUILDING CODE TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
2. NO FIELD WELDING SHALL BE PERMITTED.
3. THE FOLLOWING SPECIAL INSPECTIONS (WHERE APPLICABLE) SHALL BE REQUIRED PER CHAPTER 17 OF THE BUILDING CODE.
  - PERIODIC SPECIAL INSPECTION OF HIGH-STRENGTH BOLTING
  - CONTINUOUS SPECIAL INSPECTION OF DRILLING OPERATIONS FOR PIER FOUNDATIONS
  - CONTINUOUS SPECIAL INSPECTION TO VERIFY LOCATION, PLUMBNESS, DIAMETER, AND LENGTH OF PIER FOUNDATIONS
  - PERIODIC SPECIAL INSPECTION TO VERIFY ADEQUATE SOIL BELOW GRADE
  - PERIODIC SPECIAL INSPECTION OF PLACEMENT OF REINFORCING STEEL
  - CONTINUOUS SPECIAL INSPECTION OF ANCHOR BOLTS PRIOR TO AND DURING CONCRETE PLACEMENT
  - CONTINUOUS SPECIAL INSPECTION OF CONCRETE PLACEMENT
4. SPECIAL INSPECTION IS NOT REQUIRED FOR WORK OF A MINOR NATURE OR AS WARRANTED BY CONDITIONS IN THE JURISDICTION AS APPROVED BY THE BUILDING OFFICIAL. THUS, SPECIAL INSPECTION ITEMS ABOVE MAY BE WAIVED AS DEEMED APPROPRIATE BY THE BUILDING OFFICIAL.
5. NO STRUCTURAL OBSERVATION IS REQUIRED.

**MATERIAL NOTES:**

1. ALL STEEL PIPES SHALL CONFORM w/ ASTM A500 GR. B (42 KSI MIN. YIELD STRENGTH).
2. ALL OTHER STRUCTURAL STEEL SHAPES & PLATES SHALL CONFORM TO ASTM A36, U.N.O.
3. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND PROCEDURES OF THE AMERICAN WELDING SOCIETY (AWS) BY CERTIFIED WELDERS PER AWS D1.1 FOR STEEL AND AWS D1.2 FOR ALUMINUM. ALL WELDING SHALL BE PREFORMED IN A SHOP APPROVED BY THE BUILDING OFFICIAL. STEEL WELDS SHALL BE BY E70XX LOW HYDROGEN ELECTRODES.
4. STEEL SHALL BE HOT DIP GALVANIZED PER ASTM A123 SPECIFICATIONS AFTER FABRICATION OR PAINTED WITH RUST INHIBITIVE PRIMER.
5. ALL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL CONFORM TO ASTM F3125 GRADE A325 SPECIFICATIONS, U.N.O. A325N AND A325X ALLOWED.
6. ALL BOLTS SHALL BE GALVANIZED IN ACCORDANCE w/ ASTM F2329 SPECIFICATIONS.
7. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED PER THE "TURN-OF-NUT" METHOD AS DEFINED BY AISC.

**STEALTHSKIN PANELS**

1. FASTENER HOLES IN STEALTHSKIN FOAM COMPOSITE PANELS ARE NOT FACTORY DRILLED AND MUST BE DRILLED IN THE FIELD.
2. PANEL FASTENERS TO BE SPACED 12" O.C. MAX. AND LOCATED 6" MAX. HORIZONTALLY FROM EACH EDGE AT TOP AND BOTTOM OF PANEL, UNLESS NOTED OTHERWISE. MAINTAIN 1 1/2" MIN. EDGE DISTANCE FROM ALL EDGES. 4' WIDE PANELS REQUIRE (4) FASTENERS TOP AND BOTTOM. 5' WIDE PANELS REQUIRE (5) FASTENERS TOP AND BOTTOM.
3. WHEN FASTENER BOLT HEAD OR NUT BEARS DIRECTLY ON SURFACE OF STEALTHSKIN PANEL, TIGHTEN PANEL BOLTS ONLY 1/2 TURN PAST SNUG. APPLY THREAD LOCK COMPOUND TO THE THREADS OF METAL BOLTS. USE THIN BEAD OF EPOXY TO LOCK THE NUTS OF FRP BOLTS AND STEALTH@ STAINLESS STEEL PANEL BOLTS. USE WASHER OR FLANGED HEAD BOLT, OR FASTENER WITH LARGE BEARING SURFACE.
4. PANELS WILL EXPAND AND CONTRACT DUE TO TEMPERATURE. WHEN INSTALLING PANELS IN COLD TEMPERATURES, EVENLY SPACE PANELS ALONG LENGTH OF SCREEN WALL WITH EQUAL GAPS BETWEEN PANELS TO ALLOW FOR EXPANSION DURING WARM TEMPERATURES.
5. ADJACENT FLAT PANELS ARE JOINED BY A VERTICAL FOAM SPLINE THAT IS INSERTED INTO GROOVES CUT INTO THE SIDE OF EACH PANEL. DO NOT LIFT PANELS BY GROOVES. PANELS MUST BE LIFTED WITH FORCE DIRECTED ONTO PANEL SURFACE.
6. ADJACENT RADIUS PANELS ARE JOINED BY A VERTICAL H-CHANNEL. INSERT PANELS INTO EACH SIDE OF H-CHANNEL.
7. RADIUS PANELS MUST BE EVENLY SPACED ALONG RADIUS SUPPORT. CONTRACTOR TO MEASURE LENGTH OF RADIUS SUPPORT AND DIVIDE BY THE NUMBER OF RADIUS PANELS TO DETERMINE PROPER SPACING. H-CHANNEL CONNECTORS ARE USED TO COVER THE GAP BETWEEN PANELS AND TO ALLOW FOR PANEL EXPANSION AND CONTRACTION.
8. SURFACES OF PANELS SHALL BE COATED WITH SUITABLE PAINT FOR UV PROTECTION. TOP EDGE OF PANEL MUST BE COVERED TO PREVENT WATER TRAVEL BETWEEN PANELS. USE SHERWIN WILLIAMS "COROTHANE II" OR PRE APPROVED EQUIVALENT.
9. EXPOSED TOP AND SIDE FOAM EDGES OF PANELS MUST BE COVERED OR COATED FOR UV PROTECTION. STEALTH@ WILL PROVIDE PANEL EDGE CAPS (VERTICAL AND HORIZONTAL) TO BE FIELD APPLIED FOR THIS PURPOSE FOR MOST APPLICATIONS. HORIZONTAL AND VERTICAL PANEL EDGE CAPS TO BE SECURED TO THE EXPOSED EDGES OF THE PANELS WITH PROVIDED TEK SCREWS INSTALLED @ 12" MAXIMUM SPACING ON THE INSIDE FACE OF THE PANEL. IN RF SENSITIVE LOCATIONS, CONTRACTOR WILL APPLY (2) BEADS OF ADHESIVE TO EACH INSIDE CORNER OF THE EDGE CAP AND SECURE CAP TO PANEL WITH TAPE WHILE ADHESIVE CURES.
10. AT CORNER APPLICATIONS, VERTICAL PANEL EDGE CAPS ARE TO BE USED TO CAP BOTH EXPOSED EDGES (1 PER CUT EDGE OF PANELS). THESE EDGE CAPS ARE TO BE CUT 1" SHORTER THAN THE PANEL AND LEAVE 1" GAP AT THE TOP TO ALLOW ROOM FOR THE THE HORIZONTAL PANEL EDGE CAP AT THE TOP. CONTRACTOR TO APPLY (2) BEADS OF ADHESIVE TO EACH EDGE CAP (INSIDE CORNERS OF CAP), AND SECURE WITH TAPE AND/OR PROVIDED SCREWS (16 TOTAL PER CORNER) WHILE THE ADHESIVE CURES. IF CORNERS ARE IN NON-RF AREAS, EDGE CAP SCREWS CAN BE LEFT IN PLACE.
11. AT CORNER APPLICATIONS WITH SSV PANEL ONLY, CORNER CHANNELS ARE TO BE USED TO JOIN PANELS TOGETHER. BOTH ADJOINING PANELS WILL BE INSERTED INTO THE CORNER CHANNEL AND SECURED USING PROVIDED NYLON PUSH-PINS. THE PUSH-PINS ARE TO BE PLACED ON THE INSIDE OF ONE OF THE PANELS ONLY @ 12" MAXIMUM SPACING.

**COAX NOTE:**

ROUTING COAX CABLES THROUGH THE CONCEALMENT BULKHEADS IS POSSIBLE (WHEN LAID OUT ON PAPER), BUT MAY BE DIFFICULT IN REAL WORLD FIELD CONDITIONS. WHILE THE CABLES MAY PHYSICALLY FIT, ROUTING THEM PAST THE ANTENNAS IS UNPREDICTABLE, DEPENDING ON THE ANTENNA MOUNTING HARDWARE EMPLOYED, COAX CONNECTOR TYPE(S) USED, COAX ROUTING, AND RELATIVE AZIMUTH DIRECTIONS OF THE ANTENNAS IN THE POLE. STEALTH @ CAN NOT GUARANTEE THAT ALL OF THE COAX CAN BE ROUTED WITHOUT INTERFERENCE TO SOME OR ALL ANTENNAS. IT IS HIGHLY RECOMMENDED THAT THE INSTALLER MOCK UP THE COAX RUNS WITHIN THE CONCEALMENT AND DEVELOP A COAX ROUTING PLAN PRIOR TO INSTALLATION.



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NORTH CHARLESTON, SC 29420 USA  
P: (800)-755-0689 F: (843)-207-0207  
WWW.STEALTHCONCEALMENT.COM

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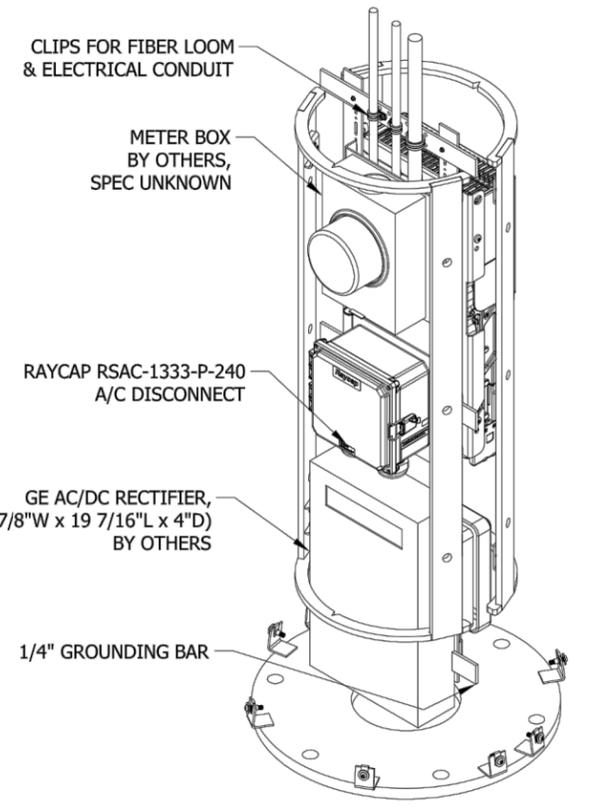
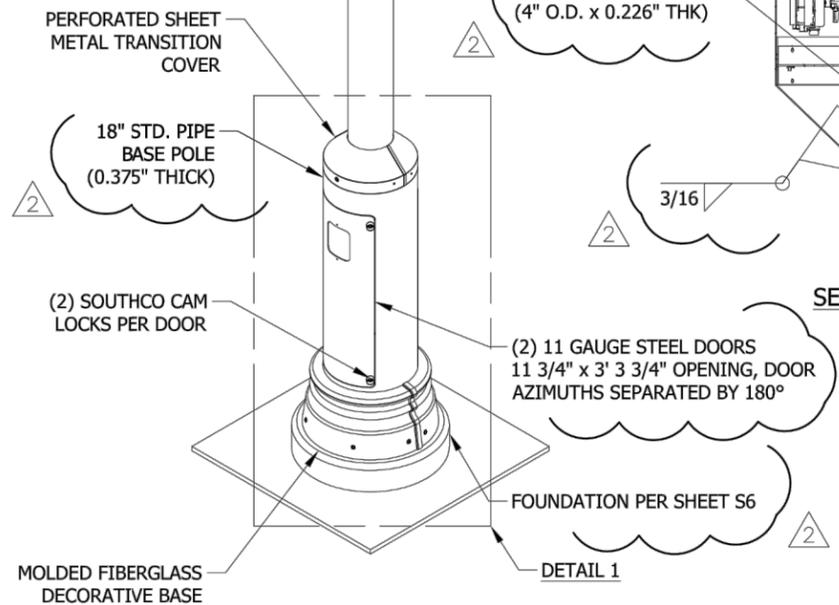
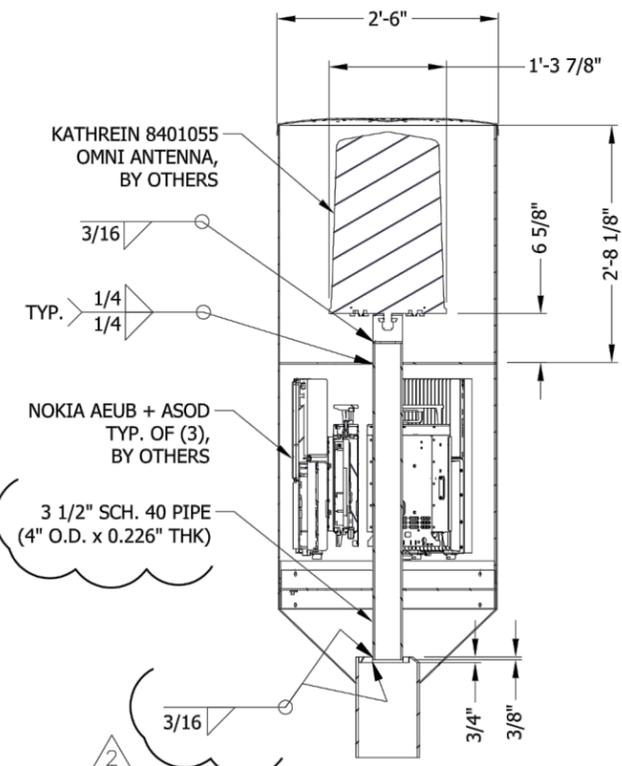
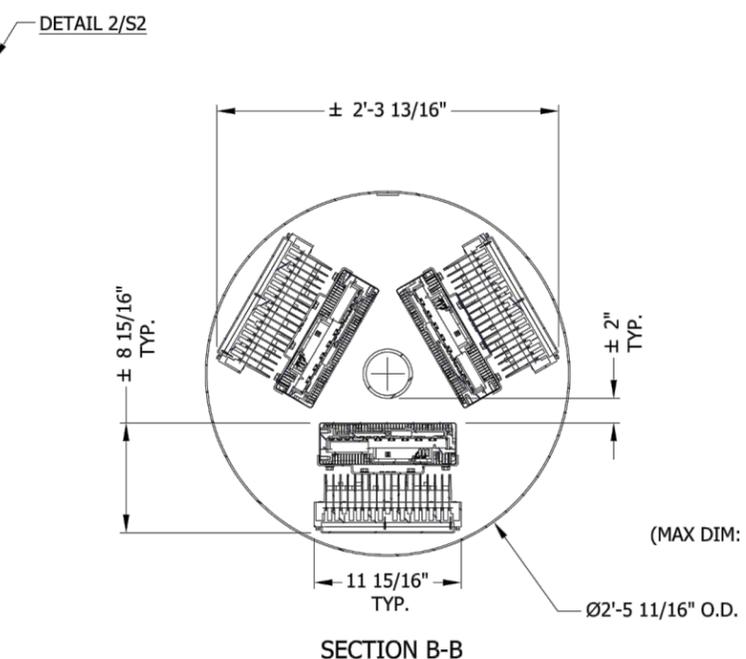
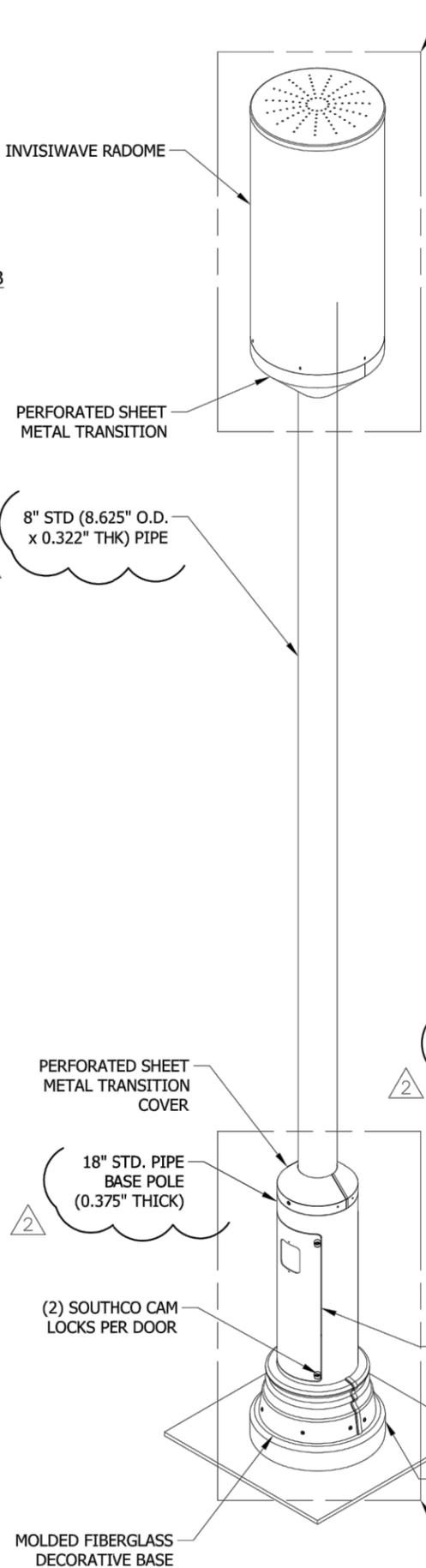
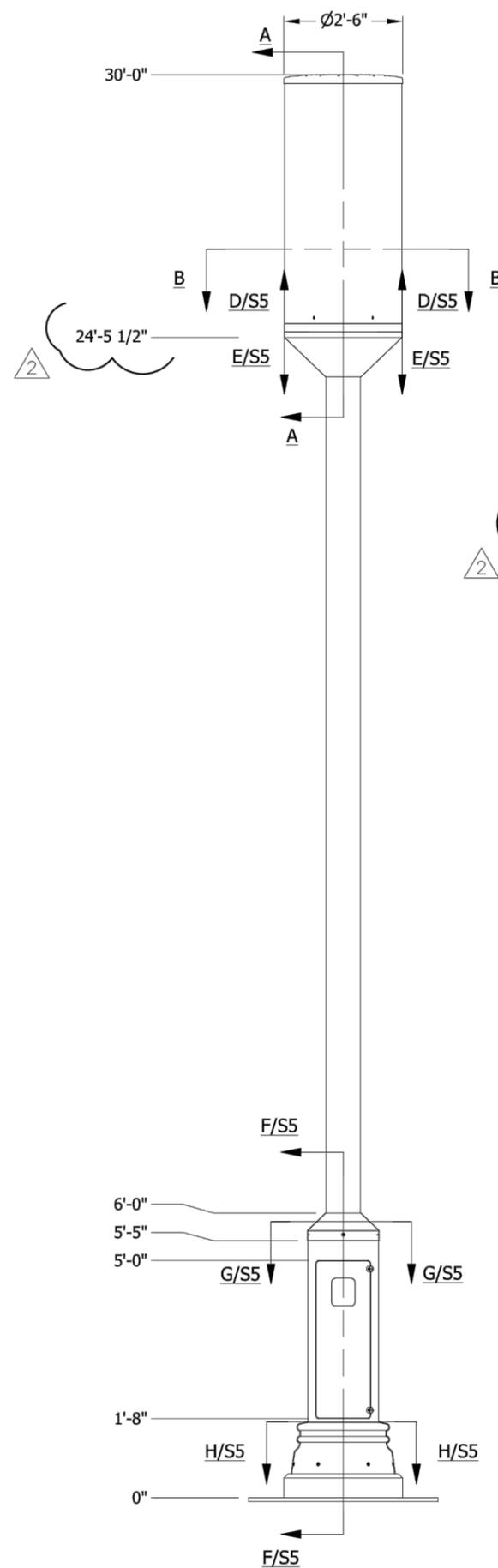
DRAWING NOT TO SCALE. UNLESS SPECIFIED OTHERWISE DIMENSIONS SHOWN ARE IN INCHES  
TOLERANCES  
DECIMALS X ± 1/16" ANGULAR X ± 0.5°  
.000 ± 0.01"

**NOTES & SPECIFICATIONS**

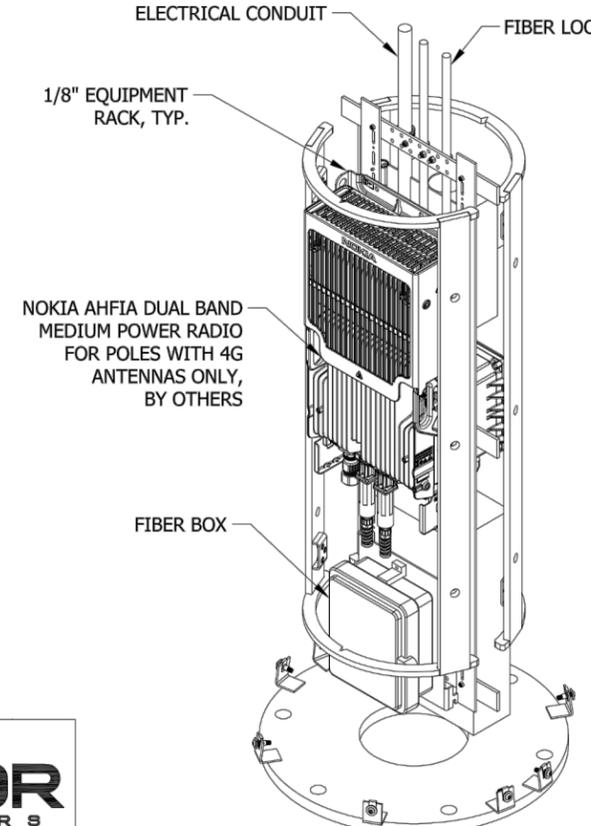
VERIZON WIRELESS  
MIDWEST CITY  
OKLAHOMA COUNTY

JOB #: VZ19-00505H-31
DRAWN: WB
DESIGNED: WB
REVISED: TPH-VSE
<b>N1</b>
05-22-19
REVISION
<b>2</b>





**DETAIL 1**  
(PIPE & BASE COVER NOT SHOWN FOR CLARITY)



**DETAIL 1**  
(PIPE & BASE COVER NOT SHOWN FOR CLARITY)

**VECTOR ENGINEERS**  
 651 W. GALENA PARK BLVD., SUITE 101  
 DRAPER, UT 84020  
 P: (801) 990-1775 F: (801) 990-1776  
 VECTOR PROJECT: U0142-776-191  
 OK FIRM LICENSE #: CA 5566 PE

**Raycap** | **STEALTH**

7555-A PALMETTO COMMERCE PARKWAY  
 NORTH CHARLESTON, SC 29420 USA  
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**LICENSED PROFESSIONAL ENGINEER**  
 ROGER ALWORTH  
 23609  
 OKLAHOMA

05/22/2019

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TOLERANCES  
 DECIMALS X ± 1/16" ANGULAR X ± 0.5°  
 XXX ± 0.01"

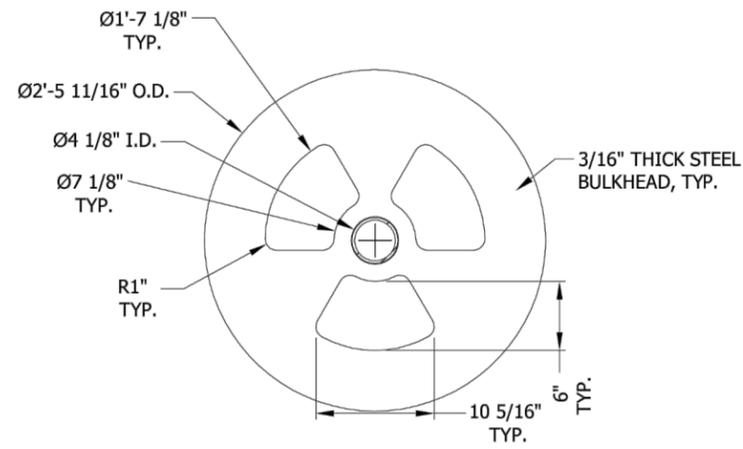
**4G/5G - ASSEMBLY - ELEVATIONS**

**VERIZON WIRELESS**  
**MIDWEST CITY**  
**OKLAHOMA COUNTY**

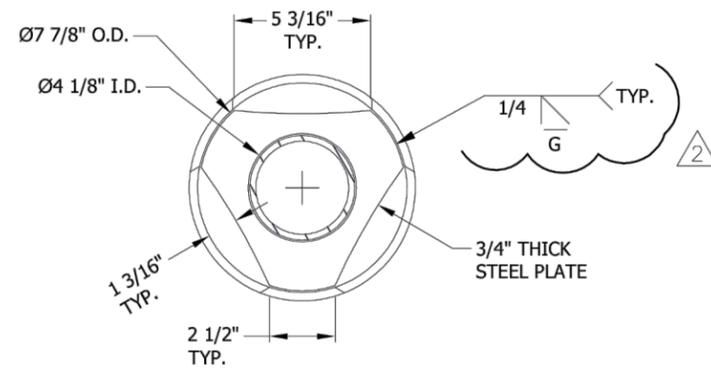
JOB #: VZ19-00505H-31  
 DRAWN: WB  
 DESIGNED: WB  
 REVISED: TPH-VSE

**S1**  
 05-22-19

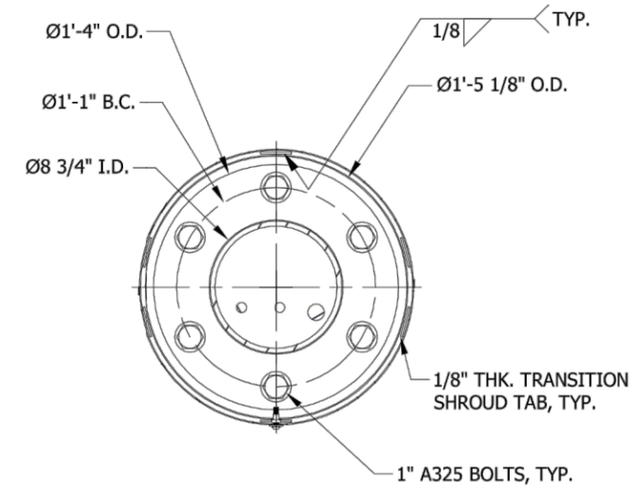
REVISION  
**2**



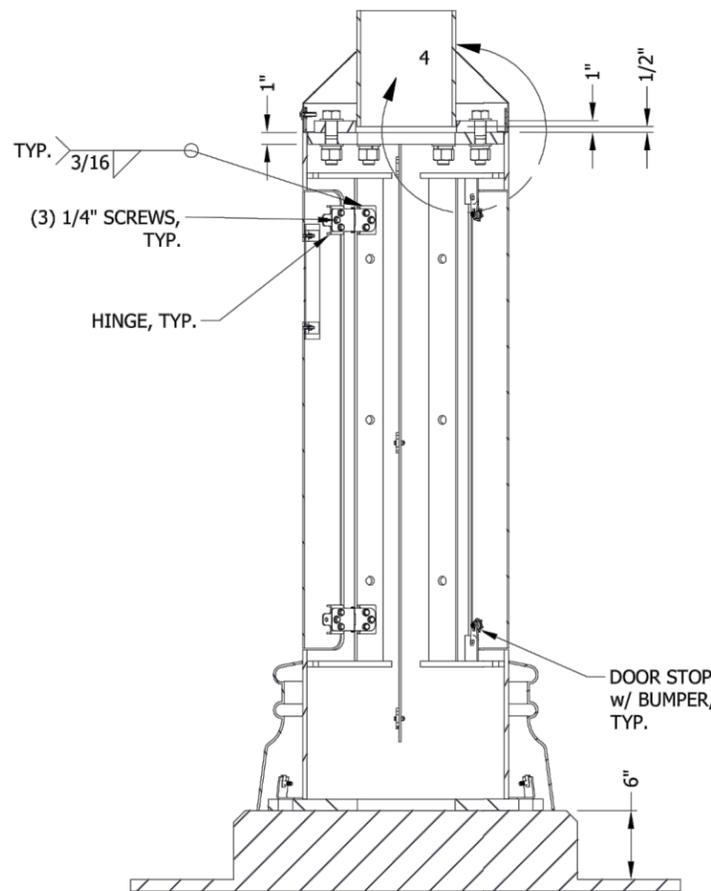
SECTION D/S5-D/S5



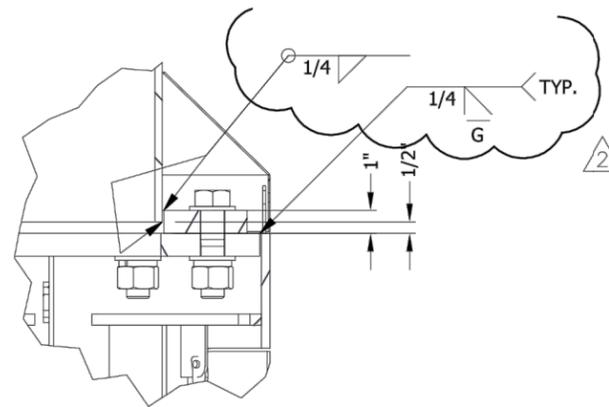
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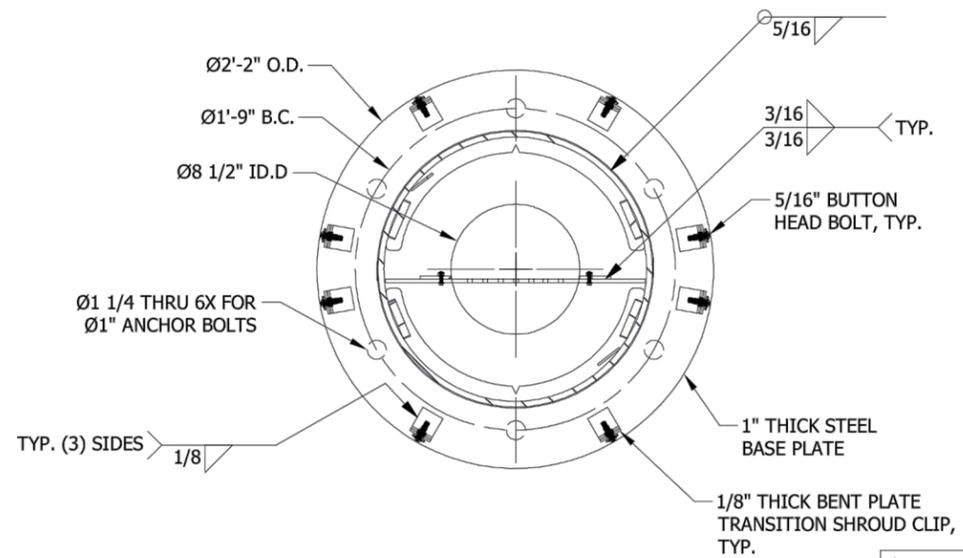
SECTION G/S5-G/S5



SECTION F/S5-F/S5



DETAIL 4



SECTION H/S5-H/S5

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 TOLERANCES  
 DECIMALS X ± 1/16"  
 .XXX ± 0.01"  
 ANGULAR X ± 0.5°

ASSEMBLY - ELEVATIONS

VERIZON WIRELESS  
 MIDWEST CITY  
 OKLAHOMA COUNTY

**VECTOR**  
 ENGINEERS  
 651 W. GALENA PARK BLVD., SUITE 101  
 DRAPER, UT 84020  
 P: (801) 990-1775 F: (801) 990-1776  
 VECTOR PROJECT: U0142-776-191  
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JOB #: VZ19-00505H-31  
 DRAWN: WB  
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 REVISED: TPH-VSE

**S5**  
 05-22-19

REVISION  
**2**

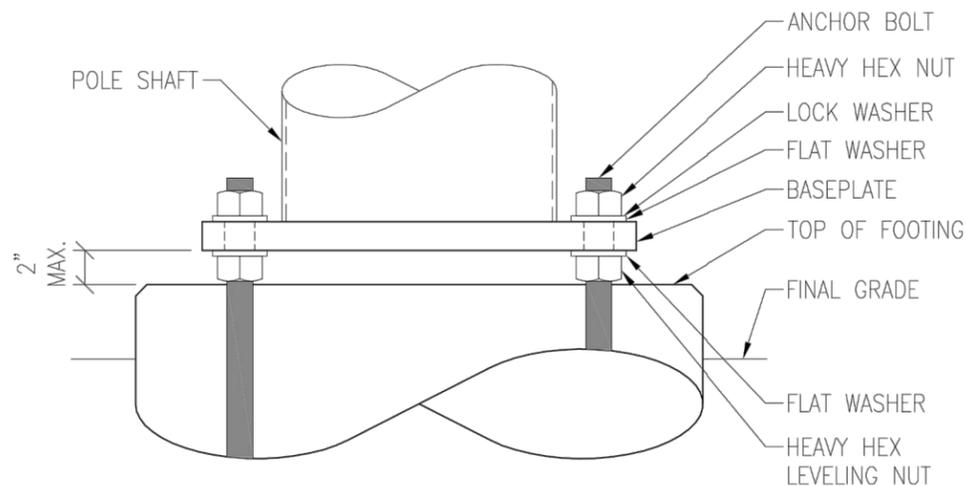
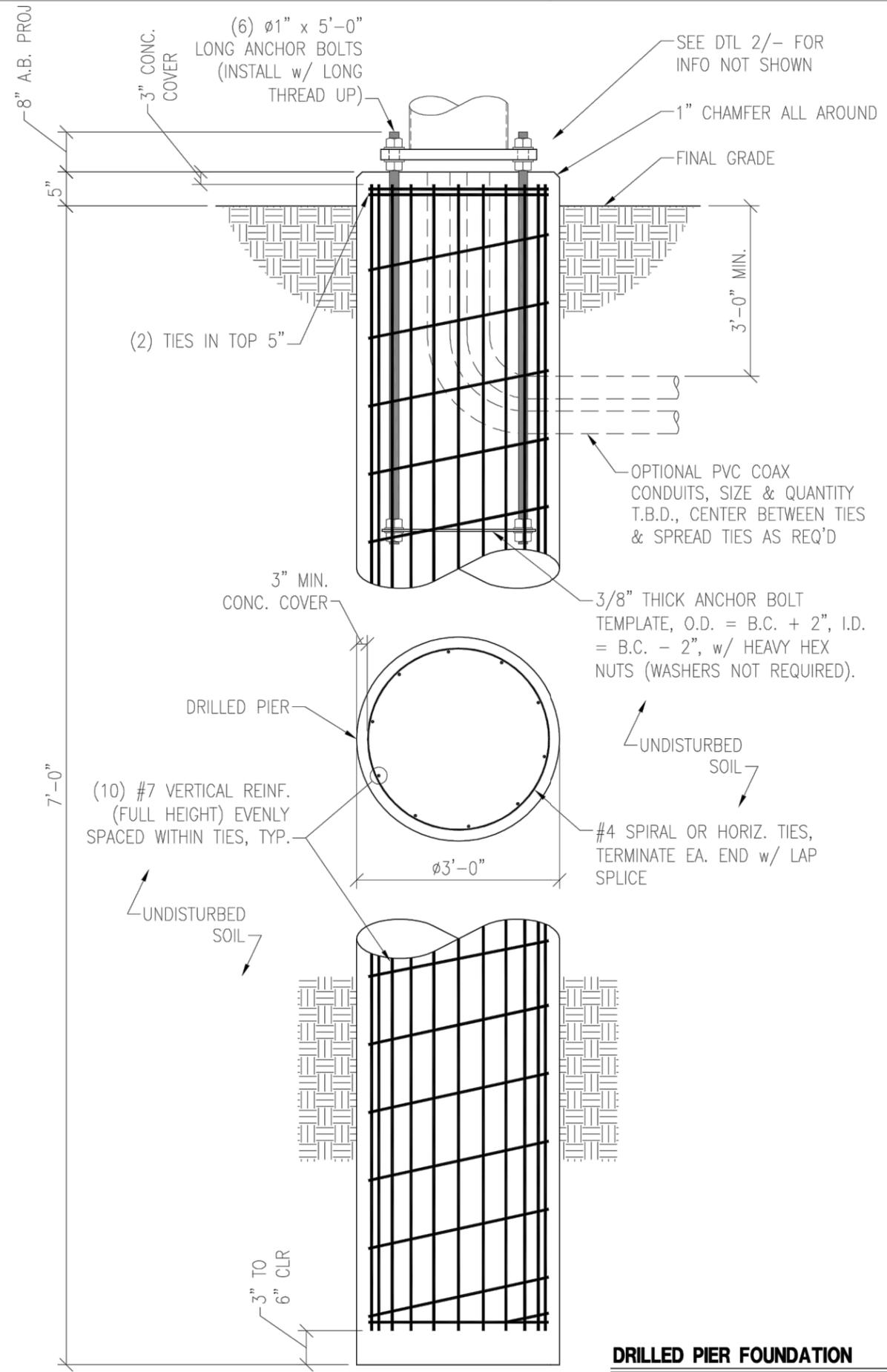
**FOUNDATION NOTES:**

1. FOUNDATION DESIGN IS BASED ON THE FOLLOWING PRESUMPTIVE SOIL VALUES:

ALLOWABLE END BEARING PRESSURE = 1500 PSF  
 ALLOWABLE LATERAL BEARING PRESSURE = 150 PCF

VECTOR STRUCTURAL ENGINEERING STRONGLY RECOMMENDS INDEPENDENT SOILS TESTING BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER TO VERIFY SOIL BEARING CAPACITY, SLOPE STABILITY, AND ANY OTHER RELATED SOIL PARAMETERS, AS REQUIRED.

2. ALL CONCRETE SHALL USE TYPE II PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MINIMUM OF 6% ENTRAINED AIR (WHERE FROST DEPTH > 0"). CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.50. CONCRETE SHALL HAVE A SLUMP OF 5" (±1"). ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-14. FOUNDATION INSTALLATION SHALL BE IN ACCORDANCE WITH ACI 336, "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS," LATEST EDITION.
3. REINFORCING STEEL SHALL CONFORM WITH THE REQUIREMENTS OF ASTM A-615, GRADE 60. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THIS DRAWING.
4. INSTALLATION OF FOUNDATION MUST BE OBSERVED BY A REPRESENTATIVE OF A GEOTECHNICAL ENGINEER FIRM OR JURISDICTION-APPROVED GEOTECHNICAL INSPECTOR. PROVIDE A NOTICE OF INSPECTION FOR THE BUILDING OFFICIAL FOR REVIEW AND RECORD PURPOSES.
5. ALL ANCHOR BOLTS SHALL CONFORM w/ ASTM F1554 GR. 55, GALVANIZED U.N.O.
6. MONOPOLE MAY BE ERECTED 3-DAYS AFTER FOUNDATION IS INSTALLED AND ONCE CONCRETE STRENGTH IS AT LEAST 4000 PSI.



N.T.S. **2**

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**DRILLED PIER FOUNDATION**

N.T.S.

**1**

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05/22/2019

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DECIMALS X ± 1/16"	ANGULAR X ± 0.5°
.XXX ± 0.01"	

FOUNDATION

VERIZON WIRELESS  
 MIDWEST CITY  
 OKLAHOMA COUNTY

JOB #: VZ19-00505H-31  
 DRAWN: WAM-VSE  
 DESIGNED: TPH-VSE  
 REVISED: TPH-VSE

**S6**

5/22/19

REVISION **2**